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HYGEIA

THE HEALTH MAGAZINE

Published by the American Medical Association

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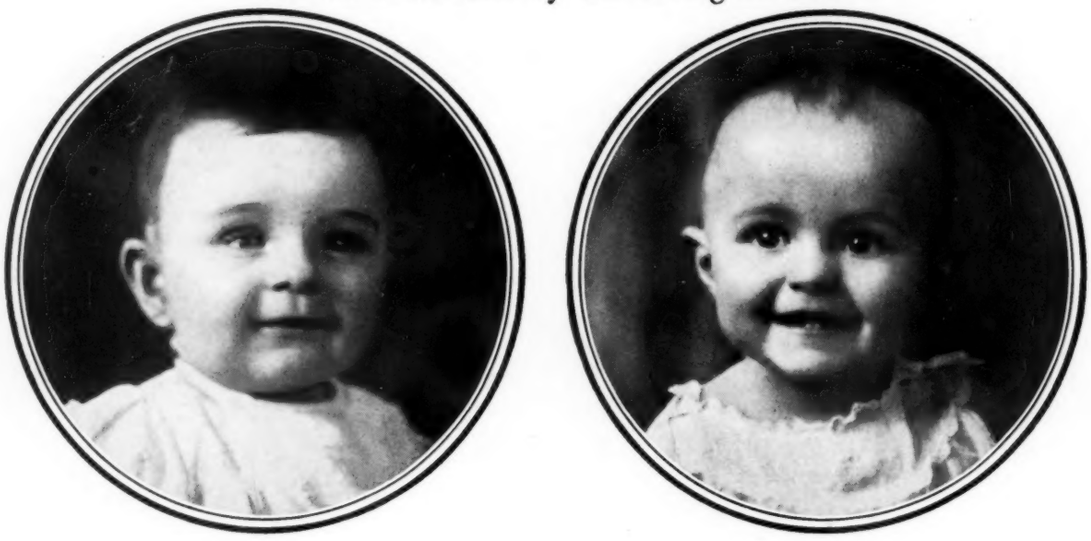

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HYGEIA

THE HEALTH MAGAZINE

Published by the American Medical Association
535 North Dearborn Street, Chicago

VOLUME 6 — JANUARY, 1928 — NUMBER 1

WHO'S WHO IN THIS ISSUE

An orthopedic surgeon's title means literally one who makes children straight. Long experience in that specialty has enabled DR. PHILIP LEWIN to formulate his ten commandments of good posture. JOHN C. EMERY humorously comments on some of the trials of being a parent.

ALFRED H. FLETCHER, assistant sanitary engineer of Louisiana, describes the carrying out of a health measure that undoubtedly averted an epidemic of malaria, following the Mississippi flood of last summer.

Understanding the adolescent is what almost every one is trying to do and DR. BORDEN S. VEEDER's article will give light to many a puzzled relative. Many people are anxious to know what scientific physicians think of the use of electricity in the treatment of disease. DR. RICHARD KOVACS writes authoritatively on this subject.

How the United States is kept free from the scourge of cholera is described by DR. W. F. DRAPER, assistant surgeon of the U. S. Public Health Service. EDWIN BAIRD, who gives a clear exposition of the production of certified milk, is a Chicago novelist and editor. Who knew that Benjamin Franklin took such an interest in public health affairs as the article commemorating his birthday shows? LOIS STICE of the HYGEIA editorial staff wrote the article.

Sadie's dyed shoes contained a danger of which many persons are not aware and DR. GAYLORD GRAVES' warning is timely. Fear of the hospital has no place in the modern pursuit of health, says WESTON OYLER.

DR. THOMAS D. WOOD and ETHEL M. HENDRIKSEN have collaborated on many important books in the field of health education.

LOUISE FRANKLIN BACHE, who tells of health teaching by means of plays, is acting director of health education of the Syracuse, N. Y., health department. LULU G. GRAVES concludes this month her helpful series of articles on breakfast foods. LOUIS DE ARMAND warns that flamboyantly advertised tooth pastes cannot of themselves cure all dental ills. DR. FLORENCE SHERMAN is assistant medical inspector of schools of the New York state department of education.

DR. SHIELDS WARREN, a Boston pathologist, tells of a diabetic party. DR. J. A. MYERS, associate professor of preventive medicine at the University of Minnesota, begins this month a series of articles on physicians who have had tuberculosis. DR. HOWARD W. HAGGARD, author of "Junior and Mr. Germ," is associate professor of applied physiology at Yale University.

Contributions to HYGEIA *are considered, and, if accepted, paid for. Stamps for the return of unaccepted manuscripts should be enclosed. All communications should be addressed to* HYGEIA, *535 North Dearborn Street, Chicago, Illinois.*

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Contents of previous issues of HYGEIA *can be found by consulting the Reader's Guide in your library.*

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Dear Sir, very respectfully
Yours Dan Drake

HEROES OF AMERICAN MEDICINE

IX. Daniel Drake

BORN in New Jersey, in 1785, of poverty-stricken parents and reared among the pioneers of Kentucky, Daniel Drake achieved unaided a unique position in medical history. As a pupil of William Goforth, he received the first diploma ever issued west of the Alleghanies. In 1815, he received his academic degree from the University of Pennsylvania.

Drake was apparently dissatisfied with the medical education of his time. He moved about constantly, fighting in the cause of better medical teaching. He changed his locality as a teacher seven times and founded two important schools, the Medical College of Ohio in 1821 and the medical department of Cincinnati College in 1835.

He founded the "Western Journal of the Medical and Physical Sciences," the most important medical journal of the West in his time. Garrison, in his "History of Medicine," says that his essays in this periodical on medical education are the most important contribution ever made to the subject in this country.

In 1841, Drake wrote one of the first accounts in medical literature of the disorder known as milk sickness. Other subjects that claimed his attention were mesmerism, evils of city life and the morals of medical students.

The great masterpiece for which Drake is best known is a description of the diseases of the "interior valley" of North America. This two-volume work, written almost entirely from personal study, was the first attempt to map out the locale of disease. The results of thirty years' travel and close observation made it a veritable encyclopedia of the Mississippi valley. His death occurred in 1852.

The Ten Commandments of Good Posture

1. Stand tall.
2. Sit tall.
3. Walk tall and "chesty" with weight transmitted to balls of feet.
4. Draw in abdomen, pulling it backward and upward.
5. Keep shoulders high and square.
6. Pull chin straight toward collar button.
7. Flatten hollow of back by rolling pelvis downward and backward.
8. Separate shoulders from hips as far as possible.
9. Lie tall and flat.
10. Think tall.

By Philip Lewin

STAND tall, sit tall, lie tall and think tall, advise the students of posture. Nor is this just tall talk. There is health as well as beauty in correct carriage, and many serious disorders of the human body are due in whole or in part to poor posture.

An imaginary plumb line dropped from the side of the head should pass through the ear and through the middle of the shoulder, hip, knee and ankle bone, if a person has correct standing posture. By performing the following movements, one will attain excellent form: (1) stand with back against the wall; (2) let the head and buttocks touch the wall but place the heels forward 4 inches; (3) flatten the lumbar (loin) region, attempting to touch the wall with the lumbar spine, and (4) holding the body erect, shift the weight forward to the balls of the feet and step off, maintaining the body in this position.

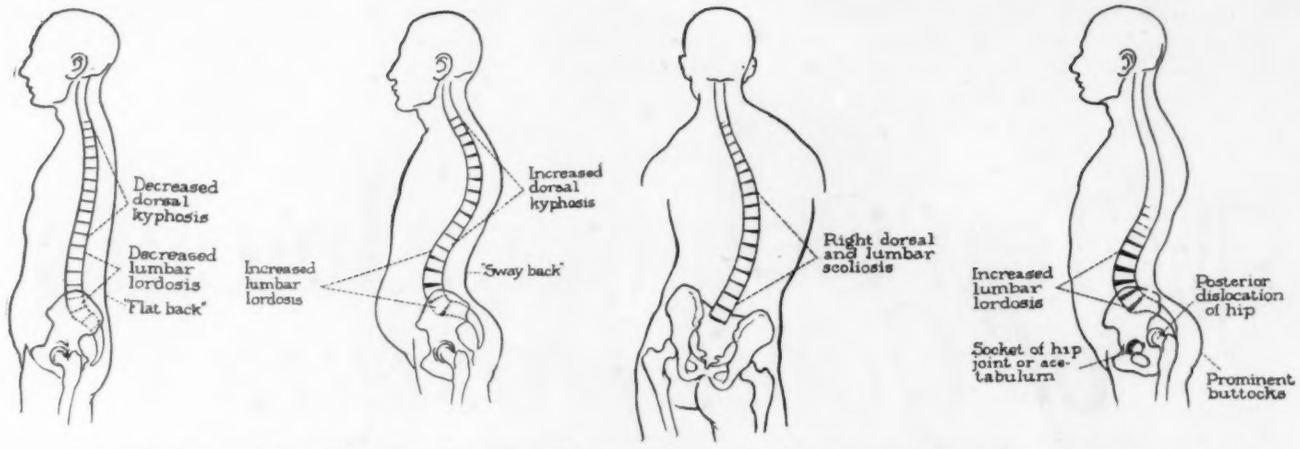
A person inherits from his parents and ancestors a certain type of back and a certain type of posture just as he inherits many other characteristics. Muscular weakness also is inherited, and unequal muscle pull, or muscle imbalance, produces disturbances of posture. But to a certain extent these inherited tendencies can be overcome. Bad posture in many instances is only a result of habit and by the exertion of will power and by proper exercises good posture habits can be acquired. Deformity and disease have an influence on posture; tuberculosis, infantile paralysis and arthritis are diseases that come to mind in this connection.

Good posture should be taught to the infant and should be given attention from that period throughout life. It is of great importance that the child form correct habits of posture as early as possible, in home, in kindergarten and in school. Poor posture is definitely on the increase, and there is no doubt that it adds greatly to the stress and strain of both child and adult life; it also exposes the individual to the possibility of superinduced infection.

The spine is a flexible rod made up of segments, at one end of which sits the head and at the other end of which sits the person. The spine has normal front to back (anteroposterior) curves; it curves forward, backward, forward and backward again as it progresses from the neck to its base. But in the lateral, or side to side, plane there are no normal curves. Any lateral deviation involving more than one vertebra is called scoliosis. As it is a flexible rod, one portion of the spine cannot be changed without a compensatory change in at least one other portion.

Man was not intended to walk upright. Many human disorders are penalties for his having assumed the upright position. Without good posture the brain, heart, lungs, liver, kidneys, pancreas, muscles and ligaments are hindered in proper function, and elimination from the gastro-intestinal tract is retarded.

Erect carriage of the head and proper curving of the neck permit the muscles, ligaments, bones, joints, blood vessels, brain, eyes, ears, nose and mouth to function better. The person



Several abnormal conditions of the spine that are the result of congenital disorders or poor posture.

with erect carriage actually thinks better; he is more level headed.

In the chest also poor posture brings on disturbances. The cramping results in improper physiologic action of the heart and lungs. The diaphragm, the large muscle that separates the thoracic from the abdominal cavity, cannot do its work properly when posture is unnatural.

Proper support is not provided the abdominal organs—stomach, liver, gallbladder, pancreas, small intestines, large intestines and omentum—when posture is bad; they are cramped and forced out of their normal position. With the stomach at a lower level, intestines pushed down, kidneys improperly supported, and strain on the various suspensory ligaments, it is simple to deduce what symptoms follow. The circulation of these tissues is impeded, and constipation, an important factor in the production or aggravation of many chronic conditions, results.

In women the effects of poor posture often evidence themselves in the uterus, ovaries and fallopian tubes. The pelvic organs in persons of both sexes may suffer materially.

Poor posture of the lower extremities results in mechanical and other disturbances, chief of which are strain on the hip joint and mechanical strain on the knee joint, ankle and foot. Undoubtedly many cases of arthritis of the knee and hip are traceable to mechanical disturbances that have been in operation over a period of many years.

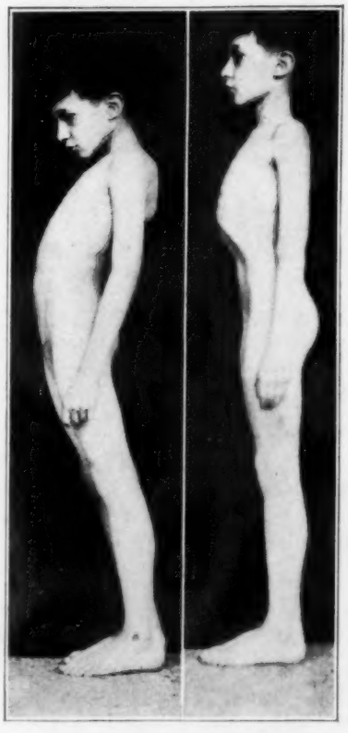
Flatfoot is a result of poor posture in many cases and may be a disabling condition. The combination of a mechanical disturbance, such as pronation of the foot, with strain, overactivity, injury or infection is a common cause of foot disability.

The methods of recording posture are the photograph, the schematograph and the silhouettograph. The schematograph was invented by Dr. Mosher and Professor Lesley of Leland Stanford University, and is a camera-like instrument with a focusing lens and a series of mirrors by which an image is thrown on a sheet of clear glass on which is superimposed a piece of tracing paper. The silhouettograph was devised by Norman Fradd; it makes a graphic record of the posture by an arrangement for photographing the individual in silhouette.

X-ray photographs are of value in determining the position and shape of the bones, and they often reveal definite disease conditions.

The treatment of postural defects consists of prophylactic and remedial measures. Prophylactic measures consist of such considerations as balancing the pelvis in cases of inequality of the length of legs. Attention to the feet is important. The remedial agents are rest, medical gymnastics and support. For rest, the mattress must be made rigid by the insertion under it of boards or a wooden frame. The Bradford or Whitman gas pipe frames are valuable in some cases. Stretching, consisting of head traction, leg traction, pelvic traction or combinations of two of these three, is valuable as preliminary treatment.

Medical gymnastics consist of postural, corrective, flexibility, power-increasing, breathing and relaxation exercises. In postural exercises, the patient is taught to stand tall, sit tall, lie tall and think tall. He learns to walk with



After three weeks of medical gymnastics, this boy's posture improved from the startling condition at the left to the erect carriage displayed at the right.

his chest thrown forward, his abdomen drawn in, his lumbar curve flattened, his shoulders well back and upward and his head upward so that he looks out of the centers of his eyes; the chin is drawn straight back. He walks "chesty."

Corrective, flexibility and power-increasing exercises are self-explanatory. Breathing exercises, such as those emphasized by Goldthwaite and Klein, are valuable. Relaxation exercises have a definite place in this treatment. The so-called stall bar exercise is of considerable value in low back conditions. Swimming and ballet dancing are excellent.

When supports are necessary a simple corset is to be considered. The orthopedic surgeon in some cases may prescribe the wearing of a corset reinforced either by a steel frame or by an aluminum cage. Braces, celluloid jackets, aluminum jackets and plaster-of-paris casts are sometimes necessary in severe cases. Plaster casts may be removable.

Physiotherapy, consisting chiefly of massage, is of great value. Hydrotherapy, heliotherapy, phototherapy and tonics have their places in the treatment. Even surgical operations are sometimes necessary to correct posture.

A Parody on "Care and Feeding of Children"

By John C. Emery

(With apologies to the late L. Emmett Holt, M.D., and with assurances of good will, since the writer's two youngsters have been reared according to Holt.)

BATHING

At what age may a child be given a full tub bath?

Usually as soon as one or the other of the parents is ready and willing to undertake one of life's major tasks.

How should the bath be given?

Gently if possible, but since this is never possible, by force if necessary.

At what temperature should the bath be given?

The unlucky parent should try to begin the rites with her, or his, temperature in the neighborhood of normal. Before she, or he, is through, however, her, or his, temperature will be considerably higher.

With what should the bath be given?

Some people suggest sponges; others hold that nothing is so efficacious as a sand blasting outfit. There are some places that you just can't get at with anything else.

What are the objections to bath sponges?

They are rather messy when you throw them at the wall in desperation as the telephone bell rings.

Under what circumstances should the daily tub bath be omitted?

When neither parent feels physically able to meet the test and is able to convince the other that such is the case. The baby won't mind, anyway.

CLOTHING

What are the most essential things in the clothing of infants?

Safety pins, diapers, safety pins, diapers, safety pins, diapers, safety pins and diapers.

How should the infant be held during dressing and undressing?

By both parents' hands and knees. The scissors hold has its adherents, but others stick by the half Nelson. If both fail, try the toe hold. Two falls out of three decide the winner.

What changes are made in the clothing of infants in the summer?

The same as in winter, except more often.

Should older children be allowed to go with their legs bare?

As far as most fathers are concerned, if they had to do all the dressing of their children, the children would go bare all over.

What sort of underclothing should be worn during cold weather?

Diapers, safety pins—oh, shoot!

NURSERY

What are the essentials in a good nursery?

As few things as possible, so that there will be fewer things for father to trip over in the dark. Hot and cold running parents are required.

How should a nursery be heated?

By father's strong right arm and a furnace.

At what temperature should a nursery be kept during the day?

Four degrees cooler than it always is.

At what temperature during the night?

Four degrees warmer than it always is.

What symptoms are seen in a child who is kept in too hot a room?

He is just four degrees harder to keep quiet than ordinarily.

(To be continued in the next issue.)

H. Armstrong Roberts

Adventures in Screening in Louisiana

By Alfred H. Fletcher

PICTURE, if you can, a trip from Vicksburg, Miss., to Monroe, La., by boat, a distance of 85 miles, and you will have some idea of the extent of the flooded area in northeastern Louisiana. Here and there were high spots and ridges where refugee camps were located. As the water began slowly to recede the refugees returned to their water-soaked homes, with a feeling that everything they once owned was now ruined or washed away. There were many low, flat areas and many sluggish streams, which were favorable to the breeding of malaria mosquitoes. You can readily see that the situation was unusual, and called for unusual methods to combat the possible increase in disease.

After the Mississippi Flood

The most practical method of handling the emergency proved to be screening the malaria carrier away from the mosquito to prevent Mrs. Anopheles from transmitting the parasites from sick to well people. (The female malaria mosquito is the only one that bites and carries malaria.) The Red Cross accepted the advice of the U. S. Public Health Service, which took charge of the entire screening program in Mississippi, Louisiana, Arkansas and Tennessee.

In Louisiana we had $10,000 with which to screen 600 homes in eight weeks' time.

Screening Out the Malaria Mosquito

Using the specifications worked out by the Public Health Service in Leflore County, Miss., as a basis, we started work on July 20 with two boys, Pee Wee and Bozo. Pee Wee was a Washington and Lee student, home for his summer vacation, and Bozo was a high school boy. Two second hand Ford trucks with slip-on bodies were offered by the state board of health to the Red Cross for use in the work of screening. These had been left over from past flood work in an area out from Alexandria. We went to Alexandria from Monroe, and the boys drove the trucks back. Both trucks ran out of gas. Pee Wee lost the slip-on body off his and had a flat tire before reaching Monroe. New slip-on bodies were hard to find and cost $30; so we built our own for $5. From this small start the outfit grew until we had twenty-eight boys on the payroll, as well as eighteen expert amateur carpenters from the Louisiana Train-

Ewing Galloway

Each boy would jump off the truck as soon as it came to a stop. One began to sketch the house, another to measure and call off dimensions of doors and windows and the third to cut the screen wire the correct size for the windows.

ing Institute at Monroe, who, without pay, built all the doors from measurements brought in by the field crews.

Screening was done in eight parishes with a combined area of about 5,000 square miles. The first step in the work, after getting the names of malaria carriers, was to screen the windows and sketch each house, showing dimensions of doors and windows. From the sketches and dimensions, doors were built and hinges and door pulls placed so that the carpenters could hang them in the quickest possible time and in the proper place.

One House Each Half Hour

At one time we had nine boys working on this part of the program. There were three crews of three boys each with truck, screen wire, tacks and tools. A well directed and experienced crew could complete the task on one house each thirty minutes if the houses were fairly close together and on good roads. Each boy would jump off the truck as soon as it came to a stop and go to his task. One began to sketch the house, another to measure and call off dimensions of doors and windows and the third to cut the screen wire the correct size for the windows. The wire was tacked on the windows without frames.

When the scene of operation changed from near Monroe to places 25, 50 or 100 miles distant, living expenses were called for in addition to salary, which meant that boys were paid $5 per day instead of $2.50. Freddie, quarterback on the Monroe high school football team, had by this time because of his conscientious, painstaking effort been put in charge of one of the screening and measuring crews. As most of the houses were off the main gravel roads, the boys spent about half the time in being hauled out of the mud.

While screening a negro home back in the swamps, Freddie found himself being watched closely by a negro mammy. At first she could not find words to express herself, but finally she burst out with, "Lawsee, the world am coming to a end; the world am coming to a end."

"What's the matter, Auntie?" asked Freddie.

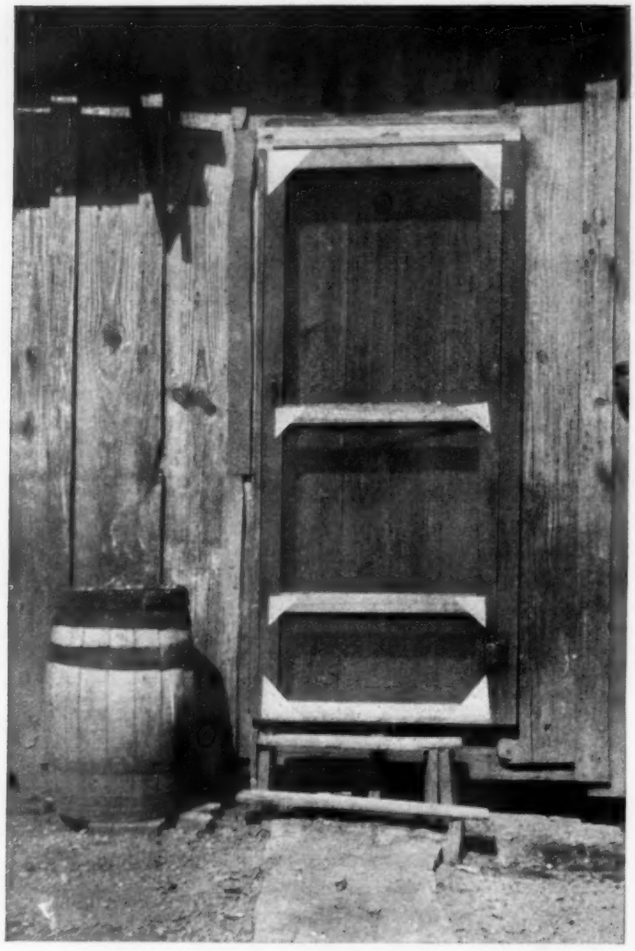
"Lawsee, the world am coming to a end: white folks a-screening black folks' houses."

Bozo Has Bad Luck

To get to East Carroll parish it was necessary to travel about 140 miles, a part of this through Arkansas and over dirt roads. One Monday morning, Bozo started with a rented Ford, a one ton truck loaded with sixty-nine doors, for Lake Providence, in East Carroll parish, to the houses where the windows had previously been screened. Tuesday morning I had a telegram from him saying that he had just arrived and was starting work immediately. I looked for him back in Monroe Wednesday, but he didn't come; he didn't come Thursday, and on Friday noon he called over long distance from Eudora, Ark., to say that his truck was broken down, repairs would cost $7.50 and he had only $8 in his pocket; he was all worn out. What to do? We wired him $10 from Monroe and told him to stay in Eudora over night, so about 3 o'clock

Saturday a tired boy reached Monroe. He had made the trip by himself, had lost eight doors, had had a spare tire stolen, had burned out a connecting rod and had had all kinds of engine and tire trouble. This is just one instance of the hard and disagreeable side of this program.

Kilcrease, another young man, set out one day with a load of fifty doors for Jones, La., 50 miles out, returned at 1:30 the next morning and reported at 6:30 a. m., that he had finished that



One of the 2,220 screen doors made at high speed by volunteer labor at the Louisiana Training Institute.

job and wanted another assignment. By noon that day he was at St. Joseph, some 95 miles from Monroe, screening windows. The same boy was finishing up in one parish and at 5 o'clock Saturday afternoon had only four houses to screen. He finished the work and reached Monroe at 10:30 p. m. to report that it would not be necessary to send over another crew on Monday. No grumbling was heard and all the boys worked overtime without extra pay.

Red Cross screening workers were not the only ones who were putting in hard and long hours. We rented a truck driven by a negro who had been up all night. He fell asleep at the wheel while driving from the factory to the warehouse in Monroe, where the check was made to see that all doors were there and in order. With a boy on top of some eighty doors and one sitting on behind, the driver turned across the street and woke up just in time to keep from hitting a telegraph pole head-on. He did swerve into it throwing the boys off and strewing the doors about. One boy landed under a pile of doors and was scratched and lamed but not injured seriously. Out of twenty-five doors thrown off against post and pavement, all but three were piled back on the truck undamaged. None of those three were broken or pulled apart, but the screen wire was torn, and they needed repair before using.

In one parish, in which the water had been particularly deep and had stayed for a long time, we were able to screen only half of the fifty houses listed because of damage to the houses by the flood water. One section of this parish was still flooded and impassable for the trucks in August. It was necessary for a man on horseback to get the dimensions of windows and doors of seventeen homes. Then when the screen wire was cut and doors made, they were delivered, and one man, assisted by the inhabitants at each house, put up the doors, faced them and screened the windows.

Working hours were from 7 a. m. to 5 p. m., but the spirit of the boys was such that in making their arrangements each night for meeting the next morning, each would try to outdo the other and would end up invariably by agreeing to meet at 6 a. m. Many nights it took darkness to make them quit.

Champion Tack Spitter

At the Training Institute factory, where we built some 2,200 doors, high speed was developed at tacking screen wire on the frames. Mr. LePrince called one boy the "champion tack spitter." Every one who went into the factory was attracted immediately by the speed and smoothness with which he handled his tack hammer. He used a magnetic hammer and fed it alternately with tacks from his mouth and left hand. The "tack spitter" is to appear at the Shreveport fair, where Caddo parish will put on a screen door-making exhibit.

A number of the flooded parishes are holding agricultural fairs and are exhibiting their prize produce raised since the flooded areas of water have receded. A strip about the flooded area reveals a surprising amount of cotton, corn, and green fields, instead of waste lands that one would expect.

The cost for the material—lumber for frames, facing, screen wire, tacks, hinges, door pulls, springs, hooks and eyes, and about 216 square inches of 24 gauge sheet steel for reinforcing joints—was $1.40 a door. The final total for the program shows an average cost of $14.60 to screen a farmhouse.

UNDERSTANDING *the* ADOLESCENT

Borden S. Veeder

Michael Greenan

ADOLESCENCE is by no means a clearly defined and limited period. From a physical side it includes the years of pubescence, but it is impossible to limit the mental changes of adolescence to a strict chronological period. The adolescent mind often continues well into years of physical maturity and many adults pass on into senescence with a degree of mental development characteristic and typical of the adolescent age.

What is really meant by the adolescent age is the peculiar manifestations of growth and change that exist or develop in the individual between the periods of childhood and maturity. It is the period when the rhythm of growth of the life cycle becomes accelerated and sex development occurs, the period when the individual for the first time has a conscious awareness of his individuality.

Back of this growth is a biologic law of life forcing the individual to assume individuality; taking him away from the protective influence of his home and family circle; urging him from within to both physical and mental independence. Without this urge of nature, life would rapidly die out and mankind come to an end. In this struggle for individual freedom, the developing adolescent comes into conflict with his environment and the difficulty of adjustment leads to the complicated problems of the adolescent age.

Hard for Parents to Understand

To understand the nature of these changes and problems one must attempt to understand the nature of the underlying mechanisms. This is not an easy task. Parents are prone to interpret the adolescent age in the light of their own adolescent experiences, and not only are their own experiences apt to be limited according to the nature of the individual environment during their adolescence, but their recollections are often hazy and blurred.

The attempt to interpret the adolescent in view of personal experience is one of the most frequent sources of friction between the adolescent and his parent. Little help is to be had from the adolescent himself, as one of his chief difficulties is to express the vague mental changes and experiments that are a part of him. To understand the mechanism of adolescence one must approach the subject in a much broader way and with a more general perspective.

The Cycle of Pubescent Growth

A close interrelationship exists between the physical growth and the mental development that take place during adolescence. The rate of physical growth of an individual starts at birth with a remarkable velocity, which continues throughout the period of infancy. Then throughout the period of childhood the rhythm slows into a fairly regular increment of height and weight, which continues for both sexes until about the tenth year. At this time the average American girl starts to grow rapidly in stature and takes on weight. During the next four years she will put on about 40 pounds in weight on an average. As a rule the boy does not begin this increase or accelerated growth until the twelfth year, but during the next four years his average increase is nearly 50 pounds.

What brings about this cycle of pubescent growth is not known. That it is due to increased

glandular secretions regulating growth is apparent, but the biologic law for the increased glandular activity at this time is a riddle. In this growth practically every organ and tissue in the body takes part. The bones and muscles increase tremendously and the heart nearly doubles in size.

Coincident with these changes is the marked development of the organs of reproduction and of the so-called secondary sex characteristics specific for each sex. This is so striking that one is apt to overlook the general growth and development and consider only the development of sex. There has been a tendency to consider sex development and adolescence as one and the same thing and to credit altogether too much to sex, from both the physical and mental sides of the adolescent age. While a most important, if not even dominating factor, it is by no means all.

The general growth and development that take place during the adolescent years bring frequent physical problems. With this growth comes an interest in physical things; the child becomes intensely absorbed in his own development and the power that comes with his new stature. A new interest in games and sports is but an instinct to try out this new growth and power. Not only are games and sports important in bringing about muscular coordination in this rapid growth, which makes the adolescent awkward and gawky, but they offer an outlet for the overabundance of spirit and the necessity of constantly doing something that is characteristic of the period.

Dangers in Competitive Athletics

One of the most important health activities of recent years has been the development of athletics for adolescent girls. But this new instinct is fraught with a danger, which is often overlooked or neglected. There is a constant and increasing tendency to overtax physically the growing adolescent organism beyond its functional capacity. There is a trend in American life, for example, to begin competitive exercise too early and to put too much stress or emphasis on winning a game rather than on sports as a method of exercise and play leading to healthful development.

Boys, in particular, are apt to be forced by environment and through the instinct of hero worship to take part in games beyond their physical capacity. The result is naturally harmful. All too often one sees the cumulative burden of school work, athletics and social life lead to physical retardation and breakdown.

The adolescent age is a period of sex differentiation and the changes that take place in the two sexes are quite different. This is a biologic law, which cannot be altered by custom, education, method of living or environment. There is nothing of a physical nature in the boy comparable to the development of menstruation in the girl. The mother must teach the girl to be prepared for menstruation and to handle it as a normal physiologic phenomenon and not as a pathologic one.

Based on these physical changes are certain changes in instinctive and emotional life. It is normal that the adolescent mind should be concerned with these vast physical changes and that the subject or element of sex should enter in. The sex urge is a dominant one comparable only to the instinct of self-preservation. Our ethical code places social and economic restrictions on the physiologic sex urge of the adolescent. A large part of adolescent conflict is based on the fact that there has been constructed around the subject of sex an arbitrary social environment that is in opposition to biologic laws. I do not wish in any way to raise the question of the right or wrong of this, but it is a fact that must be frankly admitted if parents are to understand the mechanism of the adolescent age.

Substitutes for the Sex Urge

At this time the question of sex becomes a matter of subjective interest, and the sex instinct is greater in the boy than in the girl. No matter what other outlets are offered to take the place of the sex urge, at their best they are substitutes.

Throughout childhood the physical growth and development of the two sexes go hand in hand. Adolescent growth, on the other hand, begins earlier in the girl than it does with the boy. Hence, we reach a period—from 10 to 16 years—when physical growth and chronological age are no longer parallel. Yet in nearly all educational and recreational activities chronological age and physical age for the two sexes are considered as one and the same thing. This leads naturally to the question of coeducation, a subject about which most persons either have a sentimental point of view or more commonly accept the usual economic solution without question.

When the adolescent age is viewed from the standpoint of its mental and psychologic mechanisms and reactions, it is difficult to reach an understanding of what is going on if adolescence is regarded as a fixed, limited, chronological period, a period limited by anatomic growth, or a period related only to the development of the reproductive function. Rather it must be regarded as a phase in the development of the individual in which certain manifestations of personality develop, particularly a group related to environmental adjustment.

In infancy the mechanisms are largely instinctive, at first related to body needs or necessities, as hunger and sleep. Later the primary responses to stimuli become formed into patterns, and habit forms are established. The child has a restricted environment and obeys unquestioningly the authority, wisdom and dic-

tates of mother and caretakers. Behavior difficulties at this time are chiefly habit problems. Then come locomotion and speech, and the environment widens, but it is still limited to the immediate family group.

In the next stage of development, the early school age, the environment opens out and the child has to make a new social adjustment. But here he is limited again by a group of fixed inhibitions and repressions and to the parental authority is added the authority of the teacher and school system. All this the child accepts unquestioningly.

Into this simple scheme of things comes a decided change, and it is this change, which may appear rapidly or develop gradually, that makes up adolescence from a mental point of view. It comes about as a part of the growth rhythm and in some way is undoubtedly related to the increase or development of the glandular functions. The new element may be described as a consciousness of self. The adolescent develops a sense of personal awareness, and self-consciousness and introspection are simply the efforts of the adolescent to become acquainted with himself.

Release from Adolescent Conflicts

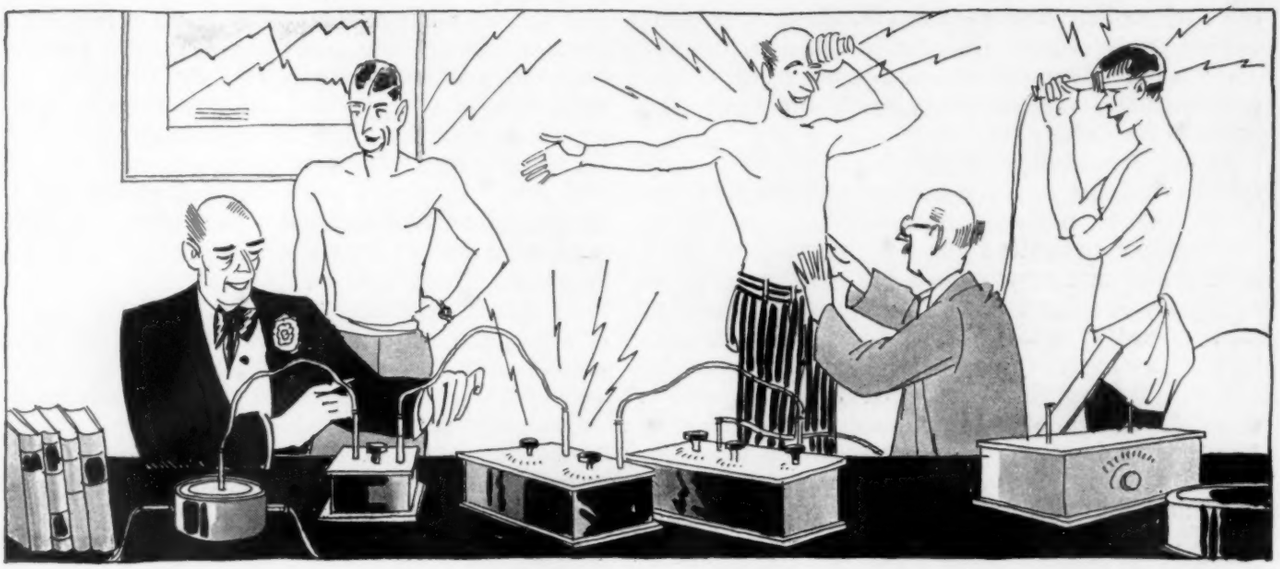
In this new consciousness from the growth from within are certain things, as the awareness of self as an individual and the development of the conception of self as a separate unit in the social group; the sense in some degree of the struggle for survival. Introspective tendencies, idealism, mysticism, romanticism, the drift to concrete conceptions, a transfer of interest from performance to motive or purpose, are among the traits that appear. Together with these is a yearning for self-expression and perhaps in the background of all the urge and mystery of sex. The adolescent finds himself adrift from the accepted pattern of his earlier years and gropes about in an effort to orient himself anew. He finds himself hedged in on all sides by a world of reality and actuality, by an environment that repels and often represses this internal growth and development. To this world he must make an adjustment and in this struggle for adjustment between the growth within himself and the world without lies the adolescent conflict.

Perhaps at first the adolescent is unaware of the conflict, but sooner or later, in most instances, the conflict is obvious both to himself and to those about him. The most remarkable thing is that to the average adolescent nothing happens. After a more or less conscious or unconscious struggle he conforms. The more one considers this the more remarkable it is. He adjusts by simply giving up and conforming. But this is not the only method of release or escape. A second method is that of finding some path of interest to which he clings that will wipe out all the rest. Thus, certain adolescents turn to intellectual pursuits, to religion, to artistic spheres, as music or painting, which so engulf him that all else becomes secondary or unimportant. But at times no compromise, no adjustment seems possible, and the unfortunate adolescent ends in that pathetic release called dementia praecox. To a last and fortunately a very small group the physical and mental conflict becomes too great and the only outlet is self-destruction.

Before You Criticize the Adolescent

A large part of the specific or individual adolescent problem is due to the failure of parents and teachers to grasp the sum total of the mechanisms of the period. I have never encountered an adolescent problem without two sides to it. My sympathies are with the adolescent as a rule, for when the individual problem becomes acute or tense, if the fault does not lie in the immediate nonunderstanding and unsympathetic environment, the failure to meet adjustment can usually be traced in large part to the early childhood environment, which has failed to build up in the developing child proper habits of thought and action.

The adolescent of today is not one bit better or worse than the adolescent of past generations. It is simply that with the constantly changing and developing structure of society his problems of environmental adjustment are different from those of previous generations. There are two things adults must ask before they can criticize the adolescent. The first is, Do they really grasp the underlying mechanism of adolescence, this unavoidable conflict between the inherent seeking after independence and the individual environment? The second question is, Has civilization or the structure of society today anything so wonderful to offer the adolescent that he can be expected passively to accept and adjust himself to it without a conflict?



The patient is invariably impressed by a shooting spark or any other electrical phenomenon.

Facts and Fallacies about

By Richard Kovacs

AN OLD STORY comes to mind from college days when the professor of physics asked a student to give the definition of electricity. After prolonged meditation the student scratched his head and said: "I knew it exactly but now it has gone clear out of my head." "What a loss to science," replied the professor; "you were the only person in the world who knew exactly what electricity was and now you cannot remember it!"

I suppose most persons today would be embarrassed by the same question in spite of the fact that they make use of electricity in many ways. Scientific research has, however, by this time definitely cleared up the nature of electricity, formerly so mysterious. An American scientist, Professor Millikan, has demonstrated that electricity is a material substance, the smallest unit of which, the electron, is infinitely minute.

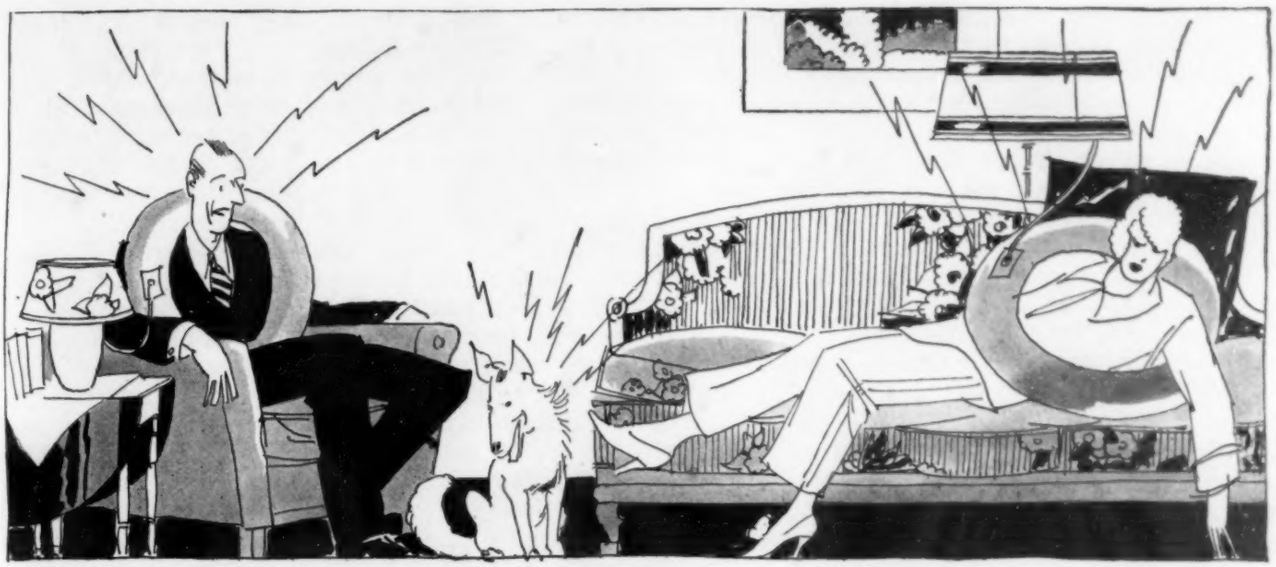
Electricity can be produced in any desired form or quantity; it can be measured as accurately as water. While it cannot be seen with the eyes, it affects some of the other senses by its varied manifestations. Electricity produces light and heat; it runs motors and dynamos; it has chemical effects. Practically every force of modern civilization depends on it.

No wonder that such a potent form of energy as electricity has made a powerful impression on the minds of people from the time when it was first discovered and that they have attributed to it all sorts of mysterious healing powers. Sincere enthusiasts, and fakers as well, at first claimed to cure almost every ailment by electricity, while on the other hand some doctors claimed that electricity worked only on the mind and cured only imaginary ailments.

Use of Electricity in Medicine Increasing

The battle is still on but more and more physicians are taking up seriously the study of electricity in medicine. With the newer types of currents and machines, better and better results are achieved in many conditions in which other kinds of treatment do not work well. It is safe to assume that before long the use of electricity in the treatment of disease and injury will be as well understood by physicians as are the other uses of electricity in everyday life.

How does electricity act on the human body? It all depends on the form in which it is applied. Water can be used hot or cold, salted or plain, as a full bath, as a strong douche or as a fine spray, and it will affect the skin and the rest of the body accordingly. Electricity acts likewise.



The magic horse collar is a horse on the patient. It is supposed to magnetize the iron in the blood. You can no more magnetize the iron in the blood than you can lift a piece of spinach with a magnet.

Electrical Treatments

Certain forms, such as the high frequency currents or diathermy, have purely heating effects. When two metal plates are placed on opposite sides of a limb or the body, all that the patient feels is a pleasant form of warmth. There is no pain and no jerking of muscles. Electric heat penetrates into the tissues more deeply than the heat of a hot water bottle or of an incandescent lamp. It brings on a strong, fresh blood supply that helps the parts to overcome inflammation. Joint troubles, sprains, muscular rheumatism, lumbago, neuritis and inflammation of the inner organs, often respond promptly.

Destroys Growths and Superfluous Hair

The action of electric heat may also be brought to such a high degree that small and large growths like warts, moles, growths of the skin, of the tongue and other places on the surface of the body can safely be destroyed. Such operations may be made without pain, without the loss of blood and with little, if any, shock. The surrounding blood vessels are sealed up at once so that there is less danger that particles of the growth may get into the blood stream to start new growths elsewhere. Progressive surgeons now use these methods of electric destruction in suitable cases.

By means of electrical applications of much milder nature, unpleasant hairy growths on any part of the body, especially on the face, can be removed. While bearded ladies earn a comfortable living as freaks in side shows, in everyday life they naturally feel quite uncomfortable about the disfigurement and will try any way offered to get rid of it. So-called beauty specialists have been reaping rich harvests by promising comfort to women, sometimes causing disfiguring scars over the faces of their victims. Others sell "wonder" pastes, which can give only temporary relief from the unwanted hair.

The galvanic needle, applied by competent persons, is the safest way to destroy unwanted hair, but it is one that takes time. By the same kind of electrical treatment in World War hospitals, large, painful and tight scars were softened, and with the help of massage and exercise, the full function of limbs was restored.

Every one remembers the ravages of infantile paralysis in the epidemic of a few years ago, when children were stricken in the best of health and, if they survived, were left with limp arms and legs, helpless to move. Properly applied forms of electricity have done wonderful work in these and other kinds of paralysis.

It is an almost uncanny sight to see the working of a surging electrical current in these paralyzed limbs. Two wet pads are applied to opposite ends of the limb; the current is slowly turned on and, while the little patient hardly feels anything, one muscle after another starts

working. With continued skilful application active use returns to these muscles in many cases; the child learns to use them again. Of course, in these afflictions, as in all other cases in which electricity is used, other important methods of treatment must not be neglected. Proper braces must support the weak muscles and prevent deformities that would otherwise follow the pull of the unaffected strong muscles. Electrotherapy in proper hands will always be part of skilful medical treatment.

Exercise of weak muscles by electricity is successfully used in weakness after fractures, dislocations and other injuries. Ingenious apparatus exercises the muscles of patients with heart trouble without any strain to the heart and so helps the general circulation.

Here the quest for beauty enters again. Lazy muscles can be worked by these devices and the superfluous fat squeezed out of them. Stout ladies hopefully crowd into so-called flesh reducing studios, where they are put on these muscle-working electric couches and into sweat cabinets to be reduced to their heart's content. Disappointment follows, however, when they learn that, in order to make the cure permanent, they must keep on dieting and exercising. Because of the liking for too many dinners and bridge parties, most of them prefer to come back again for more treatment.

Because certain kinds of electrical currents enable the physician to work muscles of a patient's body irrespective of the will, electricity in the hands of an expert is a valuable means of discovering whether a person claiming to be paralyzed really is or is not. The desire to collect easy money after some injury or accident makes many persons try to deceive doctors and juries. Among the known tests to prove the healthy state of muscles, none is more convincing than those by electricity.

Often in an early stage of paralysis following an injury to a nerve, testing by electricity is almost indispensable to the surgeon and nerve specialist to enable them to determine the extent of the injury, to tell approximately how long the trouble will last and to make it possible to start appropriate treatment at once.

Advertising Institutes and Quacks

Advertising x-ray institutes and quack doctors make use of the ignorance of the general public to foster the belief that all one has to do is to stand before an x-ray machine in a dark room and the faking, self-styled professor, by looking at a screen in front, can tell all that troubles the patient. This is far from the truth. Results of x-ray examinations in diseases of the internal organs form only part of the evidence and must be carefully compared with the laboratory findings and the doctor's personal examination before they can be used for diagnosis. The physician in charge of the case and not the x-ray operator is the only dependable final judge of the condition.

The x-ray has proved a potent measure in curing certain stubborn skin diseases and in shrinking tumors, especially cancers on the surface and on the inside of the body. But, like every other powerful weapon, the x-ray may do a great deal of harm if used improperly. The quacks who went into the x-ray field and started blithely to use it for removal of superfluous hair and certain scalp conditions speedily retired from their dangerous field of activity after some of their dupes became scarred and disfigured and went to law for protection.

Some persons may wonder why, in discussing the varied uses of electricity in treating disease and injury, I have not mentioned any of the conditions in which electricity is generally believed to be most useful; namely, nervous conditions. There is a popular belief that nerves are run by electricity and that therefore electricity must be good for the nerves, but this opinion is not borne out by the large experience of those who have given the problem careful thought. In many of the conditions of supposedly nervous origin it is more important to study and overhaul the system of the patient, correct his bad habits, improve his home conditions and ease his mental anxiety than to start him off on makeshift electrical applications.

Electricity is to be used only for those conditions in which, in the opinion of the doctor, poor function can really be improved or overfunction can be quieted down.

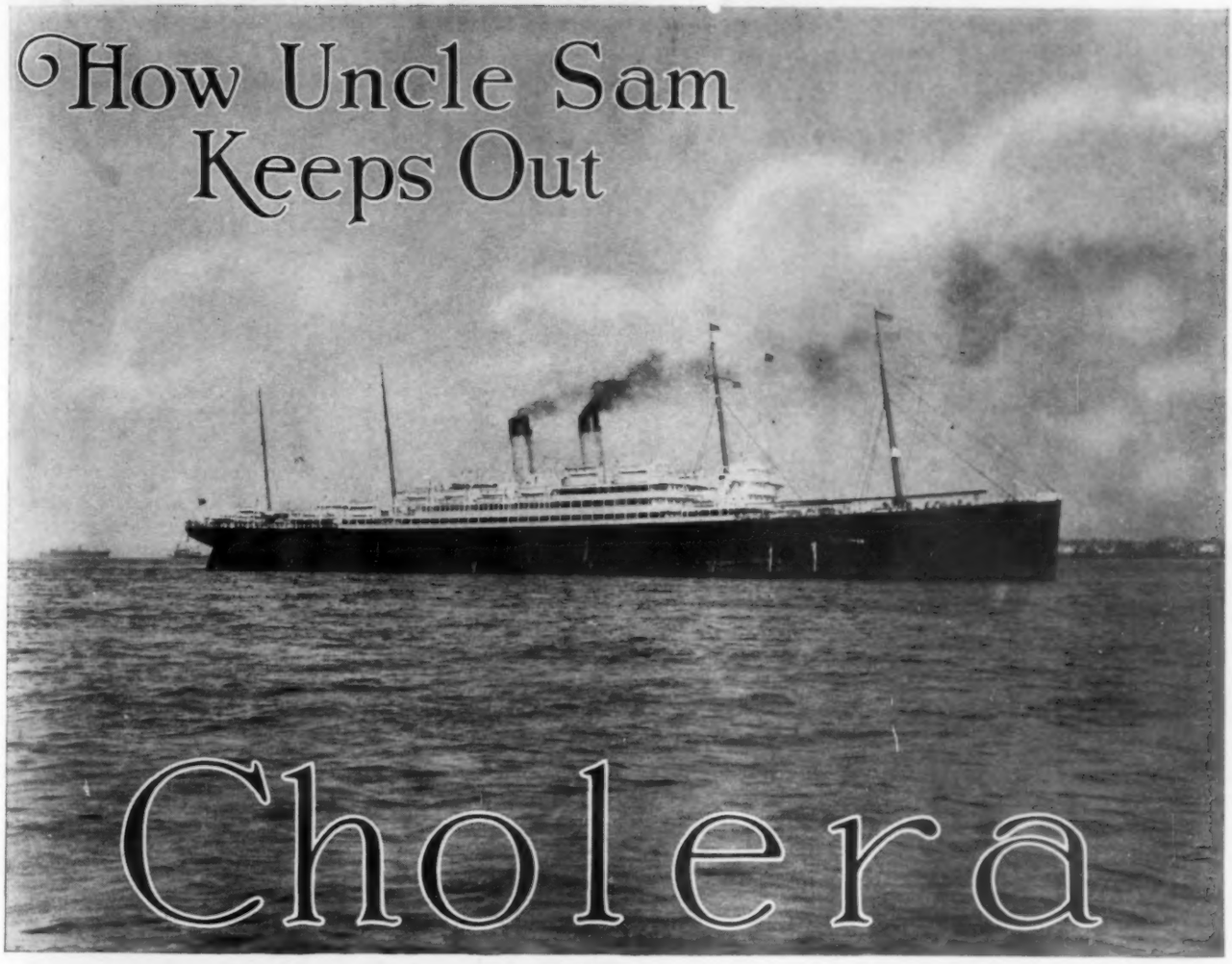
Only Trained Physician Should Prescribe

Who should prescribe and apply electricity? In every town one still finds signs in windows and advertisements in newspapers announcing electrotherapy. Quacks and near-quacks wholly ignorant of the subject are always ready to reap a harvest from any progress in scientific medicine and it is natural that some of these frauds should buy electric machines and try to make money out of them.

The newly enacted public health law of the state of New York expressly states that electric treatments can be given only by a licensed physician or on his written order. Persons not educated to recognize diseases and not able to determine the patient's real trouble have no right to recommend electrical treatment. Taking the advice of institutes not run by reputable doctors or of self-styled physical therapy experts is dangerous.

The restrictions of the present New York law have been made stringent because many persons have been burned, maimed and disfigured in these fly-by-night concerns. Electrical treatments will benefit the sick and injured most if applied by competent physicians who know their possibilities as well as their limitations and dangers.

How Uncle Sam Keeps Out Cholera



Every ship entering a United States port from a foreign country must fly the yellow quarantine flag and no person may board or leave the vessel until her passengers and crew have been inspected by government medical officers and found to be free from cholera and other pestilential diseases. This is indicated by the taking in of the flag.

By Warren Fales Draper

THE subjugation and control of cholera in the United States forms an interesting and important chapter in our history. Older writers described the disease as beginning suddenly with violent pain in the stomach and bowels, followed by purging, vomiting and all the signs of extreme debility. The extremities became cold and shriveled, the features sunken, and death frequently released the sufferer within a few hours. Half of all of those attacked succumbed.

The original source of cholera seems to have been in India, where it existed for centuries before beginning its spread in the early part of the nineteenth century. It gradually extended from country to country until it had visited almost every part of the civilized world. The direction of the spread of Asiatic cholera has invariably been along the paths of human travel.

In 1832, the disease first found its way from Europe, where it was then raging, into Canada and the United States. In the cities of Montreal, Quebec, New York and Albany, with a combined population of 271,000, there were 5,351 deaths. In New York one person of every one hundred died of cholera, and in Albany one of every seventy-seven.

At that time medical men were divided in their opinions as to the communicability of the disease. One of the ablest chroniclers of that period, after presenting at great length the arguments of both sides, sums up the situation in the following words: "Surely the conscientious inquirer after truth will be obliged to confess that if the cholera is at all or under any circumstances a contagious disease, it is so but in a trifling degree, and that generally it is propagated by other means than by the transmission

of some poisonous substance from the diseased to the healthy." He could scarcely have missed the mark more widely.

So cholera continued to prevail in the United States and to exact its toll. It was carried up the Mississippi, Ohio and Missouri rivers as far as they were navigable, and in 1849 it followed the gold seekers across the plains to California and laid many a miner low in his cabin.

As late as 1873, cholera was epidemic in various parts of Louisiana, Mississippi, Arkansas, Tennessee, Illinois, Missouri, Kentucky, Ohio, Indiana, Alabama, West Virginia, Georgia, Minnesota, Pennsylvania, Texas, Iowa and the Dakotas, and even existed to some extent among our troops. By this time, however, physicians had made considerable progress in their studies of the disease and knew something of its infectious character and its mode of spread.

Public Health Service officers making a quarantine inspection of passengers on a trans-Pacific liner on its arrival at San Francisco.

Ten years later, in 1883, Dr. Robert Koch, the noted German scientist, solved the mystery by proving that cholera was an intestinal disease caused by a comma-shaped bacillus found in the contents or walls of the intestine. With this discovery it was not difficult to ascertain that the disease was spread through water, food and clothing that had become contaminated with the discharges of those afflicted with it, and that the matter of control lay in the sanitary disposal of human wastes and the cultivation of habits of personal cleanliness.

Through the development of state and municipal boards of health whose duty it was to promulgate and to enforce rules and regulations for the safe disposal of wastes and the protection of water supplies, cholera was completely banished from this country.

It continues to exist in other parts of the world, however, and frequently knocks at our own gates, where it is recognized by our quarantine officers and refused admission. As recently as 1911, ship after ship arrived in New York harbor with cholera among its immigrant passengers. Among them also were many cholera carriers, persons who, though apparently healthy, nevertheless harbor the disease germs in their bodies.

During the last year 71,000 deaths from cholera were reported from nine countries and the actual number that occurred must have been far in excess of this. Constant vigilance is necessary to prevent the disease from again securing a foothold in the United States.

The first line of defense is that afforded by the U. S. Public Health Service through its quarantine system, both at home and abroad. Immigrants from cholera infected regions are not allowed to embark on vessels bound for the United States until they have remained isolated and under observation for at least five days since the last possible contact with a case and until a bacteriologic examination has shown that they do not harbor the cholera organism in their intestines.

Should a case of cholera develop on a vessel en route to the United States or should there be reason to suspect that a vessel might convey cholera, the sick would be placed in isolation at one of our quarantine stations and the other passengers would be detained in quarantine until all danger of their developing the disease had passed and a laboratory examination showed that they were not carriers.

The second line of defense and by far the more important comprises measures for the protection of the public health conducted through our official public health departments, state, municipal and county. When water supplies, both public and private, are safeguarded from pollution or adequately purified, when wastes are disposed of in a sanitary manner so that they cannot contaminate human food through flies or other means, and when the rules of personal hygiene are known and carried out, then cholera cannot spread even though it may be introduced.

What Is Certified Milk?

Twice each day the cows at a certified dairy farm are brushed and vacuum cleaned and their udders washed and dried.

FEW items of our national diet are more important than milk. Probably every person in America uses milk or cream in some form every day. The pasteurization process, now nationally used, was designed to protect the milk supply, and its purpose has been successful; but there are some who prefer a natural raw milk just as they prefer clear, natural spring water for their tables, and for these there is certified milk.

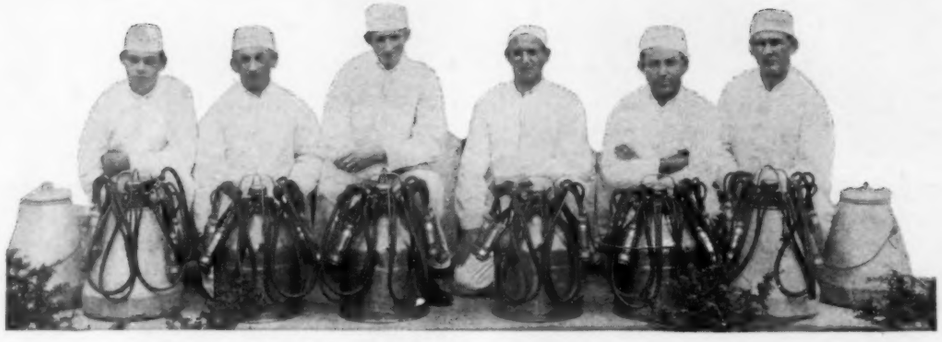
Certified milk is raw milk made as pure and wholesome as it is humanly possible to make it. Dairy farms specializing exclusively in certified milk may be found from New York state to California.

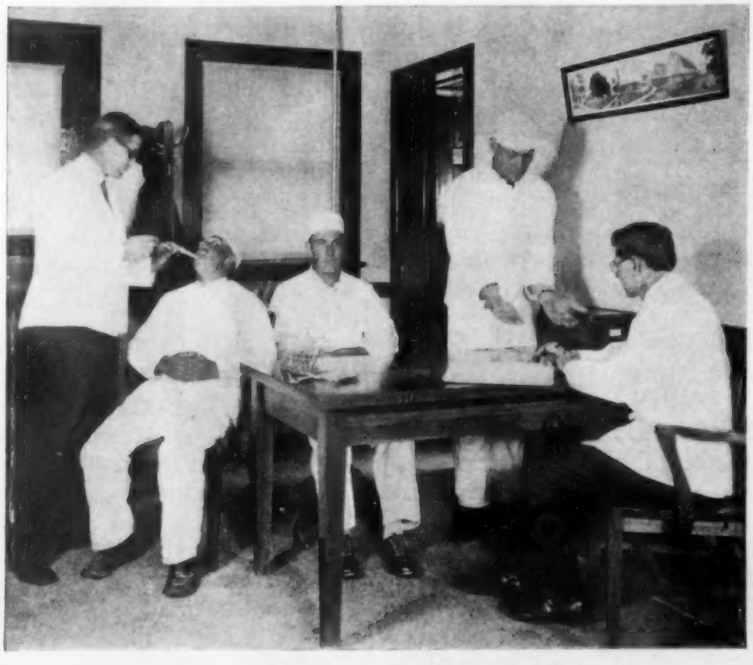
These farms are under strict medical supervision, and nothing is left undone to make their product a high type of pure food. Medical societies, milk commissions, health departments and other organizations regularly inspect the farms. Many of the proprietors employ their own graduate veterinarians and bacteriologists and have completely equipped laboratories for the purpose of making careful tests of milk and cattle.

Frequent tests of the cows keep the herd free from disease; and twice daily they are brushed and vacuum cleaned, and their udders and flanks washed and dried. They are milked by sterilized milking machines, electrically operated. Although the attendants do not handle the cows or touch their milk, all have undergone a rigid medical examination, have been pronounced in good health, are clad in spotless white suits and caps, and their fingers are manicured before they are permitted to enter the cow barns. The American Association of Medical Milk Commissions has established 200 rules and regulations for the production of certified milk, and it sees that these standards are enforced.

Certified cows are stall fed to insure a uniform product, their feed consisting of choice alfalfa hay, corn ensilage and clean ground grains, and each cow has an individual drinking fountain beside her stall so that she is constantly supplied with cold spring water. The barns are equipped with a modern ventilating system that provides an abundance of fresh air. Every cow is numbered with a metal tag clipped to her ear, and her daily record is checked.

The milk is carried from the cows to tanks built like huge thermos bottles. There it is cooled and pumped into sterilized bottles, which are capped with waxed disks and clamped





Cows are milked by machines, electrically operated. Although the milking crew handles neither cows nor milk, the men are given strict medical examination before they are hired. They are clad in spotless white suits and their nails are manicured before they are permitted to enter the cow barns. Certified dairy farms have completely equipped laboratories and graduate veterinarians and bacteriologists to make careful tests of milk and cattle.

with sanitary paper hoods that protect both the necks of the bottles and the contents. All this is done by electrically operated machinery. Finally the milk is packed in ice-cooled wooden boxes and shipped by express to its market.

Certified milk, according to the American Association of Medical Milk Commissions, is distinctly a medical product and is particularly recommended for the pregnant and nursing mother, the bottle-fed infant, the growing child, the convalescent and all cases of malnutrition, gastro-intestinal disturbances and gastric ulcers. Certified milk producers, however, contend that their product is best for every member of the family, whether ill or in perfect health.

Endorsed by Child Specialists

Pediatricians especially endorse certified milk for the growing child. He needs the vitamins, protein, fat and sugar that can best be obtained from pure raw milk. Certified milk, of course, permits the physician full privilege in its use, for he may treat it, heat it, modify it or use it in its raw state with perfect safety.

Dr. Maynard Ladd, associate professor of pediatrics at Harvard University, conducted an investigation into the relative efficiency of certified and pasteurized milk in infant feeding, and his conclusion, read before the annual meeting of the American Pediatric Society, follows:

"The use of certified milk (raw) without orange juice or cod liver oil gave a considerably greater percentage of weight development than either pasteurized milk alone or pasteurized milk with orange juice and cod liver oil. Its protective properties against rachitic changes, as shown by radiograph, were clearly demonstrated, and dentition developed normally. It is quite possible that the greater efficiency of certified over pasteurized milk is due to the more exact and scientific feeding of the cows in the particular supply of certified milk used and not to the quality of rawness. If this should be proved to be the case, it would not necessarily follow that a similar superiority of results over pasteurized milk would obtain in all certified milks. The use of orange juice and cod liver oil as a matter of routine in all babies over 3 months of age, however fed, is therefore probably well justified, even though there is reason to believe that the highest grades of certified milk are sufficiently protective; but in our opinion a larger use of certified milk in infant feeding should be encouraged by the medical profession."

However, as certified milk farmers point out, their product is not intended as a competitor of pasteurized milk.

"It is produced," they say, "solely to meet a specific need, and to meet certain requirements demanded by the medical profession. There are many cases in which fresh, cleanly produced raw milk is essential, as, for instance, in the case of mothers nursing babies at the breast, and certified milk is the only milk obtainable that is allowed by law to be used without some form of processing."

There seems no doubt, however, that certified milk farms have exerted a good influence on the general milk supply. The producers of this milk are now recognized as the leaders in sanitary milk production, and authorities agree that the work they are doing has improved dairy conditions generally.

Is Costly to Produce

Why, one will ask, cannot all milk be produced as certified milk is? A trip through any certified milk farm, with its enormous financial investment, will show why this is impossible. Everything on these farms—the medical inspection of all employees, the veterinary supervision of the herds, the cleanliness of all the buildings, the laboratory tests of milk, the rigid rules of sanitation everywhere—is designed to prevent bacterial contamination. No expense or effort is spared to make the milk as pure and wholesome as it is possible to make it. As municipalities are careful to keep their water supply so pure that it does not need to be boiled, so certified farms take care that their product does not need pasteurization. Nothing is left to chance on these farms. There is no guesswork.

Authorities, such as Dr. E. V. McCollum of Johns Hopkins University, after lengthy observation and experience, assert that infants, children and invalids derive the greatest benefit from raw milk. Raw milk, free from bacteria and devoid of foreign material, most closely adheres to nature's standards.

Wide World

Benjamin Franklin

By Lois Stice

French statuette of bisque showing Franklin surrounded by books and scientific apparatus. (From the Metropolitan Museum of Art, New York.)

BENJAMIN FRANKLIN'S scientific interests are popularly associated with lightning, a key and a kite. Few persons know that the indefatigable intellectual curiosity of the great statesman whose birthday is celebrated on January 17 extended to many phases of medicine, hygiene and public health.

Franklin lived at a time of beginnings. Born in 1706, he lived in the harassed period of colonization and took an active part in the formation of the young United States. He was instrumental in establishing the first hospital, the first medical school, the first fire company and the first public library in America.

Among Franklin's friends were some of the foremost physicians and scientists of America and Europe. Dr. Benjamin Rush, the father of American medicine, dedicated a book to Franklin. When William Shippen and John Morgan went abroad as young medical students, they carried letters of introduction from Franklin to Dr. William Cullen, a great physician of Edinburgh. Dr. John Fothergill and his nephew, Dr. Benjamin Waterhouse of Boston, the first physician in America to practice vaccination for smallpox, were among his firmest friends.

Further evidence of his relation to the medical profession is the fact that he was an honorary member of the Medical Society of London and of the Royal Medical Society of Paris, besides several societies in the United States, although he never received a medical degree, as some have supposed he did.

Franklin was the financial genius who succeeded in launching the first hospital in America, the Pennsylvania Hospital of Philadelphia. The idea originated with his friend Dr. Thomas Bond, but it soon became evident that without the influence of Franklin, the first citizen of Philadelphia, the hospital would get nowhere.

Franklin among the powdered heads of Europe, from

and PUBLIC HEALTH

An Anniversary Article

French statuette, by Nini, of Franklin experimenting with electrical apparatus.

The provincial legislature had balked at appropriating funds for an institution from which Philadelphia would get the benefit. But Franklin, the diplomat, soon produced a plan whereby the legislature appropriated 2,000 pounds on condition that the city raised a like amount. The lawmakers responded handsomely, congratulating themselves on their magnanimity.

the recent biography of Franklin by Phillips Russell.

First, however, the ex-newspaperman went about publicity for the venture in the most approved modern manner. "Previous to the solicitation," he said in his autobiography, "I endeavored to prepare the minds of the people by writing on the subject in the newspapers, which was my usual custom in such cases, but which he had omitted." The hospital was built, and Franklin served for many years as president of its board of managers.

It was Franklin, whose formal schooling amounted to two years, who conceived the idea of an academy for the "compleat education of youth" in Philadelphia. After years of effort, the scheme took hold, and from that beginning grew the College of Philadelphia, in which Dr. Shippen and Dr. Morgan instituted in 1766 a medical department which became the present University of Pennsylvania school of medicine.

Since little medical writing was done in Franklin's day, it is of interest to learn that the young publisher printed a number of medical books, including an account of the Pennsylvania Hospital, which he wrote himself.

Franklin's fame is primarily founded on his experiment with electricity. He was deeply interested in the application of the newly discovered force to the relief of human ailments. When the startling discovery of electricity was made by Dutch scientists, it was the sensation of the scientific world. Electricity was to be the great cure-all. Stories of cures in Europe pene-

trated to the colonies, and as Franklin was an authority many sufferers from paralysis were brought to him to be "electrised."

With a bulky apparatus consisting of two 6-gallon jars, Franklin treated his patients, and he recorded that they seemed to improve, "but I never saw amendment after the fifth day." Even that small respite he thought might be due to the exercise of coming to his house and the "spirit given by the hope of success."

Originated Bifocal Spectacles

Practical to the last degree, Franklin observed sources of ill health and inconvenience, then did something about them. Since he found it a nuisance to change his spectacles every time he wanted to look up from his book to watch the scenery while traveling, he had the lenses cut and half of each placed in the same frame. Thus originated bifocal spectacles, still the most convenient arrangement for those whose eyes must be corrected for different distances.

Abstruse questions of anatomy and physiology perplexed his mind. He contrived experiments to determine the cause of motion of the blood through the system. He wanted to know whether the blood was quicker in motion when the pulse was faster. In one article he conjectured "as to the cause of the heat of the blood and of the hot and cold fits of some fevers."

In letters to friends, Franklin descanted at length on absorption and perspiration in connection with his theories on ventilation and the contagiousness of colds. Lead poisoning was another subject in which his interest had been roused during the years when he toiled over cases of leaden type. The treatment of cancer with pokeweed also claimed his attention.

Franklin's activities in the field of public health were constant and productive. He brought about the paving and cleaning of Philadelphia's streets. Among his projects was one that still agitates cities—getting rid of smoky chimneys. It led him to invent the famous "Franklin stove" in 1742, and forty-three years later he was still writing on the "Cause and Cure of Smoky Chimneys."

"Great and bright fires do also very much injure the eyes," he wrote in a pamphlet about the stove, "dry and shrivel the skin and bring on early appearances of old age. In short, many of the diseases proceeding from colds, as fevers, pleurisies, etc., fatal to very great numbers of people, may be ascribed to strong-drawing chimneys, whereby in severe weather, a man is scorched before while he's froze behind."

The death of his 4 year old son Francis from smallpox caused Franklin to become an ardent advocate of inoculation. In his autobiography, he wrote:

"I long regretted bitterly and still regret that I had not given it to him by inoculation. This I mention for the sake of parents who omit that operation on the supposition that they would never forgive themselves if the child died under it, my example showing that the regret may be the same either way, and that therefore the safer should be chosen."

In later years Franklin wrote, in collaboration with his friend Dr. William Heberden of London, a pamphlet about inoculation and its advantages. Franklin's part was a careful analysis of the status of inoculation in the colonies.

Fresh air was perhaps Franklin's favorite subject. He arrived at conclusions which even now, 137 years after his death, are still being preached to timorous persons who are afraid of air.

"I look upon fresh air as a friend," he said in the essay on smoky chimneys; then he adds a sly poke at his medical friends:

"You physicians have of late happily discovered after a contrary opinion had prevailed for some ages that fresh and cool air does good to persons in the smallpox and other fevers. It is to be hoped that in another century or two we may all find out that it is not bad, even for people in health." He estimated the time correctly. Not all of us have found it out yet.

Franklin on "Colds"

From the praise of fresh air, the philosopher proceeded to consider colds and expressed the then heretical opinion that "people often catch cold from one another when shut in close rooms, coaches, etc., and when sitting near and conversing so as to breathe in each other's transpiration, the disorder being in a certain state." That is a clear statement of a fact that has not yet been established in the popular mind. Franklin deserves the title recently applied to him, "the first civilized American."

The first civilized American acquired his interest in hygienic subjects at a precocious age. When he was 16 he embraced the doctrine of vegetarianism, not so much for its hygienic as for its economic advantages—he was thereby enabled to buy more books. He continued it for some time, but a codfish tempted him, and he did eat, and thereafter he "continued to eat with other people, returning only occasionally to a vegetable diet."

During the era of Poor Richard's almanac, when the future savant was seeking to entertain and instruct his readers, he formulated a set of rules, advocating what are still urged as the cardinal points in preserving health, fresh air, exercise and a sensible diet.

"A temperate diet frees from diseases," Poor Richard declared, and later, "a temperate diet arms the body against external accidents."

Despite his bookishness, Franklin was keenly aware of the necessity for exercise. He recommended swimming especially and was himself a swimmer of considerable reputation.

"The exercise of swimming is one of the most healthy and agreeable in the world. After having swam for an hour or two in the evening, one sleeps cooly the whole night, even during the most ardent heat of summer. Perhaps, the pores being cleansed, the insensible perspiration increases and occasions this coolness," Franklin declared in a letter to his friend Dubourg, a French physician.

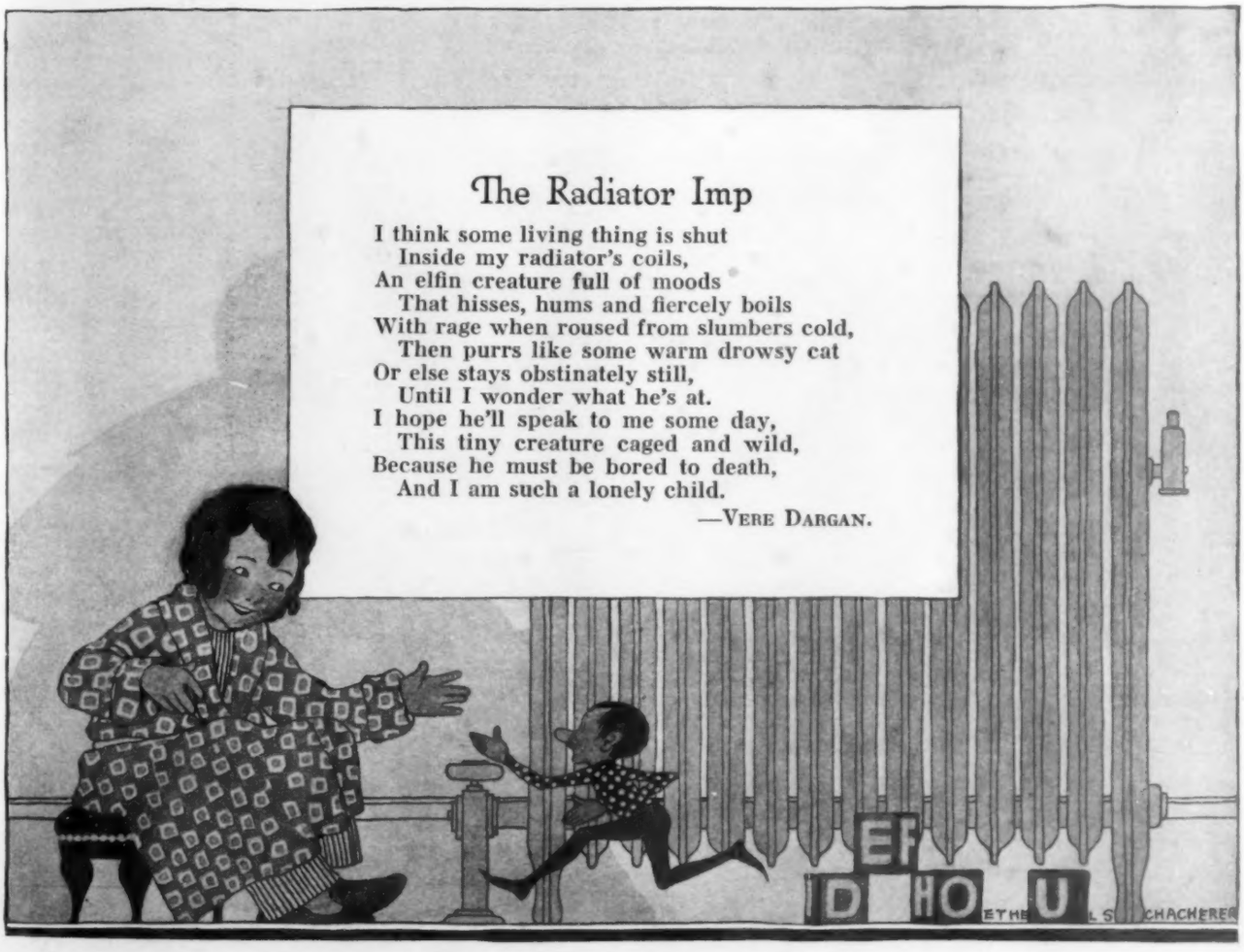
The use of water internally and externally was one of the principal ideas in which Franklin was in advance of his time. His habit of drinking water exclusively so astonished his beer-guzzling companions in the London print-shop in which he worked that he was called the "Water-American."

At a time when persons with fever were forbidden to have water, Franklin announced that he had forestalled an illness by drinking cold water and by sweating himself. Late in life he suffered from a disease of the skin, which he relieved by taking hot baths for two hours at a time, in an ingenious bathtub shaped like a shoe. It is said that he would sit in the heel of this curious vessel with his legs under the vamp, with a book propped on a reading stand specially constructed on the instep.

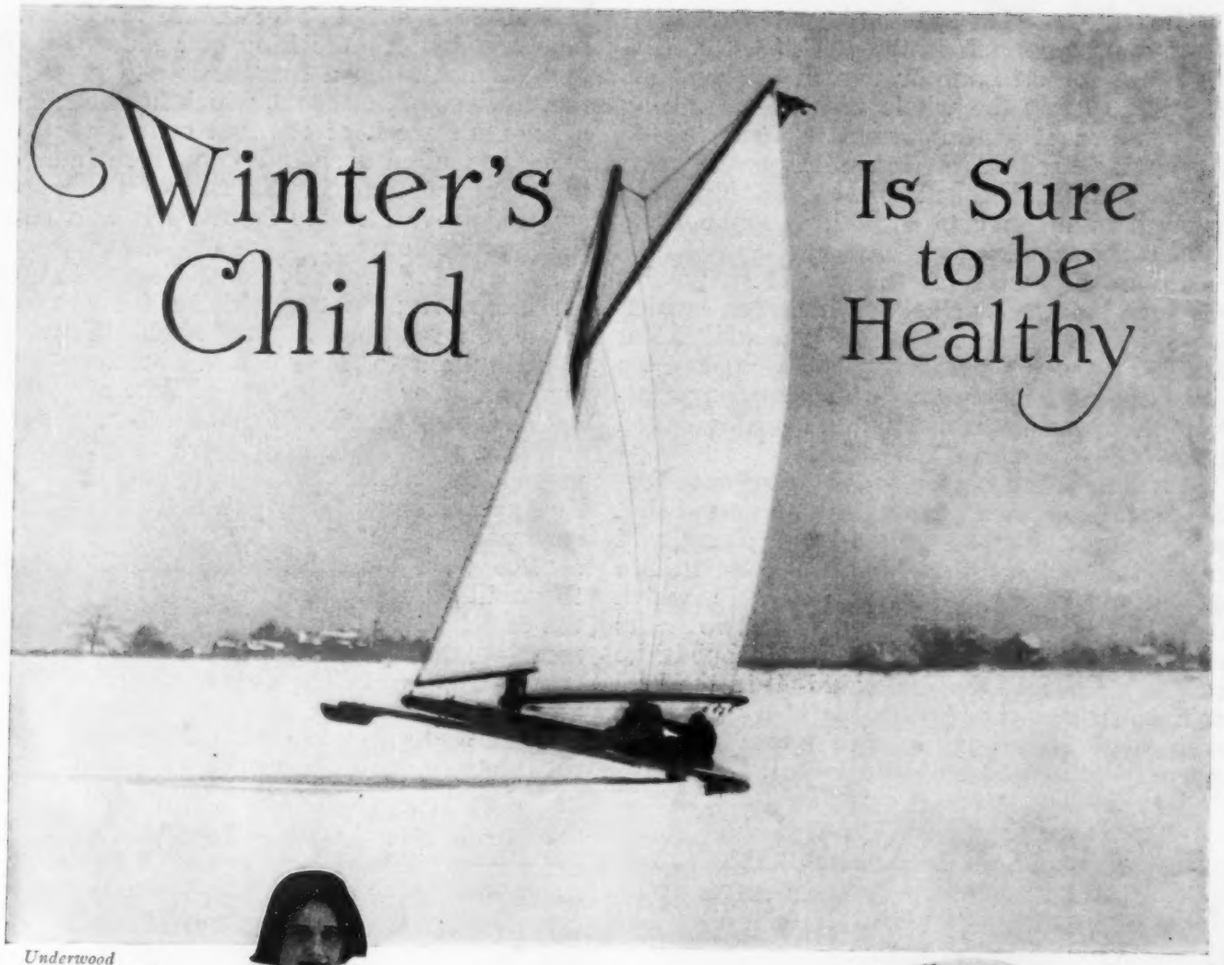
Franklin's scientific eminence was signally recognized when the king of France, in 1784, appointed him on a commission to investigate mesmerism. The report, which has been called a scientific work of the first order, worthy of being consulted even today by those interested in hypnotism and in diseases of the nervous system, drove Mesmer from Paris and ruined his prestige forever.

In view of his varied interests in public health questions, it is not surprising that Franklin wrote on health. In his book, "Franklin's Contribution to Medicine," Theodore Diller quotes a letter on "The Art of Procuring Pleasant Dreams," in which Franklin discusses hygiene in a style that might serve as a model for present-day writers. It is an epitome of Franklin's preachments for health and ends with this sage paragraph:

"These are the rules of the art. But though they will generally prove effectual in producing the end intended there is a case in which the most punctual observance of them will be totally fruitless. . . . The case is when the person who desires to have pleasant dreams has not taken care to preserve what is necessary above all things, a good conscience."


The Radiator Imp
I think some living thing is shut
Inside my radiator's coils,
An elfin creature full of moods
That hisses, hums and fiercely boils
With rage when roused from slumbers cold,
Then purrs like some warm drowsy cat
Or else stays obstinately still,
Until I wonder what he's at.
I hope he'll speak to me some day,
This tiny creature caged and wild,
Because he must be bored to death,
And I am such a lonely child.
—VERE DARGAN.

Winter's Child Is Sure to be Healthy



Underwood and Underwood

H. Armstrong Roberts

Underwood and Underwood

Keystone

Underwood and Underwood

Sadie never had to bother about elevating the inner border of the sole in view of impending flatfoot.

Sadie's Shoes

Why They Disappeared

By Gaylord W. Graves

SADIE is a Bohemian girl, 15 years old, with a rotundity that may be in part racial and an appetite like charity in the sense that it vaunteth not itself yet never fails. If Sadie had been born in Boston she might have had blue blood from birth but none of her ancestors came over in the Mayflower and had it not been for the magic shoes the kind shoemaker fixed for her, nobody might have paid attention to Sadie's blood anyway. Her doctor never had to worry about her complexion and he knew enough about her ancestry to know it was pure blooded even if not blue blooded.

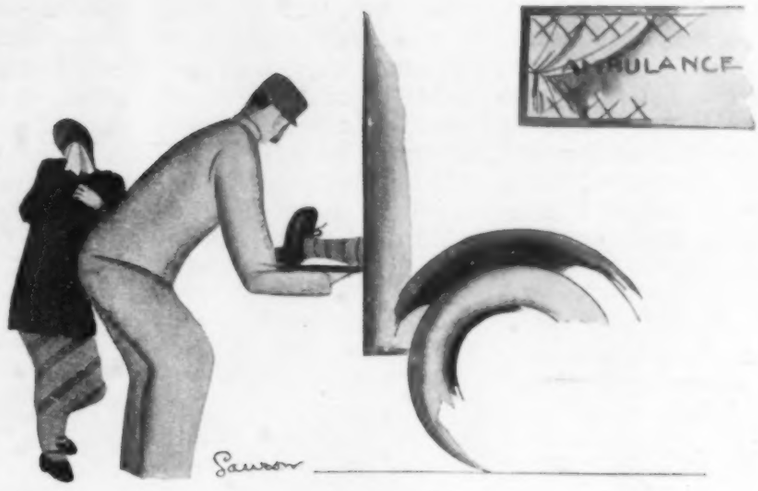
For Christmas Sadie was presented with a pair of brown suede shoes. Whether they fitted perfectly or not makes little difference because they were at least comfortable, and Sadie, in spite of her avoirdupois, had good foot ligaments and never had to bother about elevating the inner border of the sole an eighth of an inch in view of impending flatfoot.

Sadie exploited the shoes from the outset and in the first two weeks she gave them all the wear that was coming to them. By the end of three weeks they did not look like suede at all, and by the end of four weeks they had to be resoled and the day of her pride in them had passed.

The benignant old shoemaker looked the shoes over commiseratingly and decided that cleaning would be ineffectual and futile. In fact, since in his expert opinion they ought to have been black in the first place, he decided to blacken them to cover up the dirt. He received them on Monday and delivered them early Wednesday, but Sadie had no occasion to put them on until Wednesday afternoon. When she opened the brown paper bag in which they were wrapped, she could hardly believe her eyes because the suede tops now exhibited the prettiest bluish-black hue she had ever seen, the new soles effectively contributed a charm of their own and the worn places in the toes no longer showed.

After three weeks. *After four weeks.* *After dyeing.*

An excitable observer told a policeman a girl was dying and with great expedition she was picked up and whisked off in a big noisy ambulance to a hospital.



As soon as her plump feet were "on location," as the movie people say, she went proudly out with her mother to a nice restaurant where they had an elaborate blue plate luncheon. The combination of this bountiful meal with the emanations of a subdued, though squawky, radio could easily have explained the sleepy state into which the youthful diner drifted as she finished her dessert. However, she was alert on leaving to the point of exclaiming with sudden interest as she passed a mirror at the exit: "Mother, what a funny light there is in this place! Don't I look queer!"

At the same time, Sadie's head, for some unaccountable reason, began to feel queer and her voice lost its resonance, but she was now in the open air and that relieved her head.

Maternal solicitude might have been evoked instantly under other circumstances, but the business of crossing the street to the afternoon's objective, a large department store, precluded ordinary mental reactions and, as matters stood, there was only time for the lady to note that her daughter certainly did look queer and then most unexpectedly, only two minutes after they had left the restaurant, that Sadie was slumping to the sidewalk just as if the sidewalk were her customary bed and she were too sleepy to be undressed.

Fortunately before the group about them had grown to a crowd Sadie regained some measure of orientation, but she seemed phenomenally weak and her color did not come back. In fact, she was cyanotic, which, being interpreted, means blue.

At this stage an excitable observer told a policeman a girl was dying and then with great expedition she was picked up and whisked off in a big noisy ambulance to a hospital.

* * * * * *

Some two hours later a perplexed intern surrounded by Sadie's relatives reported a case of extreme cyanosis of an unexplained character which was not responding to ordinary treatment. Fortunately the arrival of the attending physician coincided with that of another who knew the girl's family and insisted that Sadie had never had any heart trouble and was always the picture of health. The implication was that Sadie had no business to be blue. She really wasn't blue; she was violet. It would have been only natural to predict that she might become ultraviolet and vanish in the manner of ectoplasm.

What Made Sadie Blue?

Shadows of past cases flitted before the group until one doctor recalled that two Italian painters admitted to the accident ward of another hospital more than fifteen years before had looked exactly as Sadie looked. With an aniline preparation they had been removing paint from the floor of a closed room.

Had Sadie been using paint remover? Had she inhaled illuminating gas? Had she taken headache powders? Had the home radiators been painted? Had she eaten poison candy? Would a blue plate dinner make a diner blue? No, the alibi was complete. But wait! Those old shoes had been blacked and when they were taken from the paper bag after their their return to the house they had smelled most pungently of something unusual.

After the pathologist had taken away some of Sadie's bad blood he remarked that it was not chocolate-colored, as expected, but more like mahogany. When he examined it with a spectroscope, he declined to give an immediate report but agreed that a transfusion was justified and Sadie received it as soon as Grandpa's blood was found to be of the right type.

Then she promptly got well.

Next morning she ate all the busy nurse gave her, and the following morning she went home not quite normal as to appetite but no longer looking like a person with congenital heart disease.

While the pathologist was completing the report that Sadie's blood contained methemo-

globin instead of oxyhemoglobin, which means that her red corpuscles had been capable of carrying only one-third as much oxygen as normal until Grandpa contributed the fresh blood, and that the shoe dye was laden with aniline, some one reviewed a half forgotten editorial in *The Journal* of the American Medical Association of July 3, 1926, commenting on the Chicago health department's prohibition of the sale of shoe dyes, and its ruling that all recently dyed shoes should stand in the open air for seventy-two hours before being worn, while canvas and satin shoes under no conditions whatsoever should be dyed.

When they understood all this Sadie's parents gave the bewitching black shoes to the ashman and bought their offspring a nice new pair.

The Friendly Hospital

By Weston Oyler

TOO MANY persons the word "hospital" calls up an impression of horror and discomfort. Fear, like the wicked dragon of the fairy tales, seems to lurk around every corner to frighten the visitor as he treads hushed corridors, where nurses step softly and swinging doors give glimpses of glistening steel. It is unknown territory and contains he knows not what mysteries. The feeling doubtless is a hangover from the days when the practice of medicine partook of the nature of witchcraft and when magic potions and incantations were the usual instruments of the healer's art.

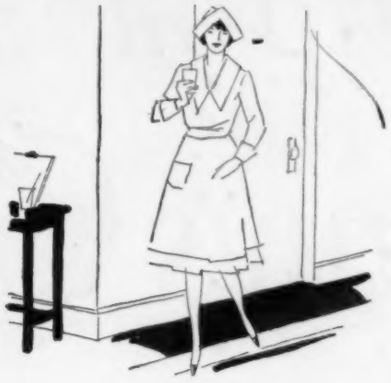
Modern scientific medicine and education of the public are rapidly changing the popular attitude to one of confidence. A hospital is a place of hope, of good feeling and sympathy. It cannot perforce be a place of pleasure, but it should bring to the mind a sense of relief, not one of fear and suspicion.

Hospital critics are usually found in one of two groups: the wiseacres who assume an air of omniscience about hospitals when they really know little, and the timid of spirit, who, because they have heard only the unpleasant side of hospital experience, are genuinely fearful.

Hospital wiseacres often know more than is good for their mental health. Just as frequently they do not know enough to know that they know practically nothing. Lack of real medical or surgical training disqualifies them in the first round of the battle for hospital learning. To be sure, they know how the food at the hospital compares with that at home; whether the floors, beds and sanitary arrangements are as good or better. But they cannot from their own knowledge determine whether or not the important medical and surgical requirements are met by those in charge of the hospital. Should they not, therefore, confine criticism to those materials and departments of hospital work that they may compare with like matters in home, factory or hotel?

Even this comparison is not wholly fair. We spend lavishly on our homes; our profits provide for the upkeep of the factory; and we pay, almost without protest, a handsome price today for hotel accommodations and food. The hospital, on the other hand, never shows a profit, as admittance charges cannot keep pace with general maintenance expenses, except in the case of a few heavily endowed institutions and private sanatoriums that are not operated on a cost basis. Constructive criticism of hospital food, clothing, furnishings, maid service, rules and other details must therefore be tempered by allowance for high costs and low rates, as

well as for necessary preventive and disciplinary measures demanded in the hospital and often excused in the home, factory, hotel and other public institutions.



If the hospital critic will compare what he gets in the way of material things and service at the hospital with what he receives in other public and private houses he will probably agree that personal service is not only featured, but carried out to a surprising degree. In fact, if he will make a thorough and fair survey of the situation, he may feel inclined to offer his local hospital a small monetary contribution to help meet the persistent demand of rising costs and the rapidly increasing number of worthy free patients.

Getting Back into Running Order

The ordinary citizen's fear of the hospital is the fear of the unknown, of the surgeon's knife, of ether pains and of bodily disorders. He knows that some friend went through a successful operation only to die at the hospital a week later. He knows of all the deaths and unpleasant diseases in numerous hospitals. He has heard of unfortunate mishaps and discomforts attending hospital vacations. A normal fear or a wholesome respect for surgeons' knives, ether cones and other hospital paraphernalia is quite in order; but, if it becomes necessary to use them, why not take a certain pleasure and satisfaction in the knowledge that the hospital is the place best equipped in all respects for overhauling a much abused body?

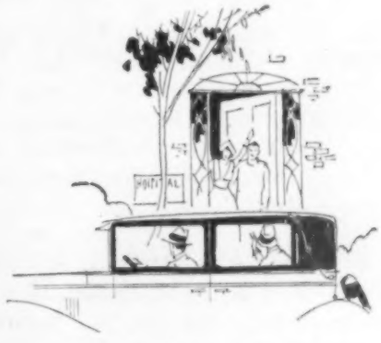
The automobile is a veritable treasure when gliding smoothly along a good concrete road; but it is a useless mass of wood and steel when it is laid up in the service station with a lot of other cripples. It is entrusted to a garage with full confidence, yet even the best garage mechanic lets his foot slip sometimes and recovers his balance if possible—at our expense. Then we forget the troubles at the service station when once more we hit the concrete road. So it should be with the hospital! But instead the wiseacres forget that they have been put back in running condition and spend half their lives fearing and telling others their fear of hospital mismanagement.

Now the timid ones are not quite so morbid in their views of the hospital, but they too miss a great deal of the happiness of life by avoiding with scrupulous care the path that leads to the hospital door. They permit themselves to be carried into the hospital only as a last resort. Why do they elect to ride when they might better walk? They have heard about the "horrible night before"; the pain preceding and following the administration of ether; the hardness of the beds; the persistence of white capped nurses who insist on baths whether one's religion calls for them or not; the swapping of babies, and many other terrible and, for the most part, exaggerated or untrue conditions at the hospital.

Efficiency under Trying Conditions

Though I am not a physician, it has been my privilege during the last fifteen years to visit many of the hospitals and allied institutions in New England and eastern Canada, as well as many in other sections of this country. I have personally witnessed many major and minor operations and have seen a good deal of hospital management. On the whole, hospitals today are efficient under the most trying conditions and have gone a long way toward standardization.

We all naturally prefer to be at home—if our family is at all decent to live with—when we are temporarily out of condition; but need we altogether shun the stay at the hospital or sanatorium where the facilities, generally speaking, are so far superior to those at home? If we have some particular ailment, physical or mental, why not try to admit it to ourselves as cheerfully as possible and look for the best way out of the difficulty? Optimism is a wonderful drug. But an overdose of any drug is attended by danger, so we should balance optimism with a generous portion of common sense. We shall then be helping to promote preventive medicine, which is prolonging our lives, improving our dispositions and, incidentally, taking a lot of the fear out of that blessed word "hospital."



Checking Up on Johnny's Cold

By Thomas D. Wood and Ethel Hendriksen

"JOHNNY has a cold again," said Mrs. Davis to her husband one evening at dinner. "Yes?" inquired Johnny's father, between mouthfuls of soup, and with no particular show of concern.

"I wonder if we should keep him home from school for a day or two?" the mother continued. "I suppose these colds are catching."

"It just occurs to me," the father replied, beginning to take an interest, "that soon after I was elected a member of the board of education last spring, we appropriated nearly a million dollars for mechanical ventilation equipment to be installed in the schools during the summer; about $50,000 a school was the cost, as I remember it. We were told that through the use of these systems, drafts would be eliminated and an even temperature maintained throughout the classrooms. The inference was that the health of the school children would be improved since the air was to be washed and cleaned of all bacteria. There was to be no further need of fussing with windows as they must be kept closed under the new system of mechanical ventilation."

Teachers Opposed to Mechanical Ventilation

"That's it," exclaimed Mrs. Davis, "you men who hardly ever go into a school building have voted away a lot of the taxpayers' good money for frills. The teachers are all opposed to the new system of ventilation."

"Well, well," exclaimed Johnny's father, now thoroughly aroused; "this seems incredible. Why, I was a member of the committee that visited the model school at K———, where this system of ventilation was said to give excellent satisfaction. The superintendent of buildings took us around and showed us how it worked; turned the whole thing on specially for us one Saturday afternoon. I never saw such a smooth running lot of machinery in my life and the way the air moved through that curtain of water was a pretty sight. It was purified just as outdoor air is purified and cleansed by a shower, you know; that's the figure the ventilating engineer, who was with us, used. We all made up our minds on the train coming back that our town must be up to date and put that system into every school."

"All that I can say is that if you had a woman member of the board of education and she were on that committee she would have thought about interviewing the teachers and looking into actual conditions. She wouldn't have taken the word of salesmen and engineers who never enter a school when it is in session"; this from the wife.

State Law Requires Elaborate Equipment

"But that isn't all, my dear," continued the husband, bent on defending his course of action, "the state superintendent of public instruction wrote a letter informing us of the passage of a new law that makes these mechanical systems necessary. You wouldn't have thought it from the wording of the law but when the ventilating engineer appeared before us he made it clear enough. He said, in fact, that he had attended the hearing before the legislature and that all the other engineers who were there had the same information. You can't deliver 30 cubic feet of air per minute to each occupant of a schoolroom, which is what the law requires, without using mechanical means. Now it seems to me if mechanical ventilation is as bad as you say it is, the state would not pass a law making it compulsory."

"I doubt if those state legislators really understood that such a law would saddle schools with

Johnny might never have had pneumonia if his schoolroom had been equipped like this one at Sherman School, Fairfield, Conn., home of window-gravity ventilation. The window deflectors may be observed. Radiators, controlled from the room, run the full length of the windows and beyond them.

all this expensive equipment," declared the wife. "I am sure that a great many taxpayers would have made things uncomfortable for these lawmakers if the intent of the law had been fully appreciated. Why, think what this means for the state as a whole, when in our city alone nearly a million dollars was spent for ventilating equipment."

"Now you can't blame our state legislature for the law when nine other states have passed similar laws," defended the husband. "And those states that have no laws have rulings with the effect of law, except in a few instances among states in the South or West, where school ventilation isn't a problem."

"Well, all I can say is that something is wrong somewhere," said Mrs. Davis, as the after dinner coffee was carried out and she excused herself to go upstairs to say good night to her small son.

"I've asked the Ellises over for the evening," she called back.

For the next few moments, the plaintive voice of a sick child, interrupted by spells of coughing; the crackle of the open fire in the living room and the rattle of Mr. Davis' newspaper were the only sounds heard in the house.

"Mr. and Mrs. Ellis, Madam," the maid announced, and Mrs. Davis went forward to greet her guests.

"Good evening, Sally. Hello there, Jim!" greeted Johnny's father. "I've just sent for the doctor for Johnny; I presume Mary has told you he has another cold. Mary lays it to the new ventilating system at the school."

"We hoped there would be a chance to talk to you about the new ventilation this evening, George," said Mrs. Ellis, "and I am glad you have opened the subject yourself, for I felt diffi-

dent about it on account of your position; and yet I knew we should come to you."

"Yes, indeed, I'm glad you came. It's evident that our board of education did not go into this matter fully enough," said Mr. Davis, "and yet we have the law and precedent on our side. I want to be fair minded but I can't understand how we could have made a mistake."

"We drove over to Fairfield, Conn., one day last fall and some friends of ours were telling us about a system of ventilation in the schools there," Ellis began, and turning to his wife, "What did they call that ventilation they liked so well, Sally?"

Window-Gravity Ventilation

"Oh, yes, I had almost forgotten about that until now; it was a modification of window ventilation. They called it window-gravity ventilation," related Mrs. Ellis. "You remember that school we visited, Jim. We drove over there to meet the Boyce children. Mrs. Boyce took us in and the principal explained the ventilation to us. All the windows had baffle boards, or deflectors, at the bottom so the windows could be opened without a draft on the children. They had radiators running the full length of the windows and beyond them, to temper the air, and the teacher could regulate the heat herself.

"Opposite the windows, high in the wall, were two little windows opening into air shafts. They were tiny and yet they were fitted with sashes and could be opened or closed. The principal explained that the overheated air is drawn out of the room by means of these ducts and that the interplay of air currents by reason of these outlets and the open windows keeps the air of the room constantly fresh. It is because the ventilation takes into account the natural movement of air currents that it is called gravity ventilation.

"But the most important part of the ventilation program in the schools is the temperature chart. Each room has a thermometer near the teacher's desk. This is read several times during the day and the temperature is recorded on a chart designed for this purpose. The aim is to maintain a temperature between 66 and 68 degrees F. The children help with the control of the ventilation in the room when they are old enough to have it explained to them."

"I suppose you didn't have a chance to find out what the system cost?" inquired Mr. Davis.

"No, as a matter of fact we didn't go into that," replied Mr. Ellis, "but you could get the figures by writing to the superintendent of schools. It must be comparatively little, a mere trifle. All the outlay I could see was for the glass window deflectors. Oh, yes, there would be the cost of installing those ducts. But if that were done at the time of construction it wouldn't amount to much."

"Dr. Brown," the maid announced.

"Come right in, Doctor," greeted Mr. Davis.

"Shall we go upstairs at once, Doctor?" Mrs. Davis anxiously led the way upstairs.

Mrs. Ellis picked up a magazine and became interested; and Davis and Ellis continued their discussion of ventilation.

"This looks like a disagreeable situation, Jim," began Davis, once they were seated comfortably and smoking.

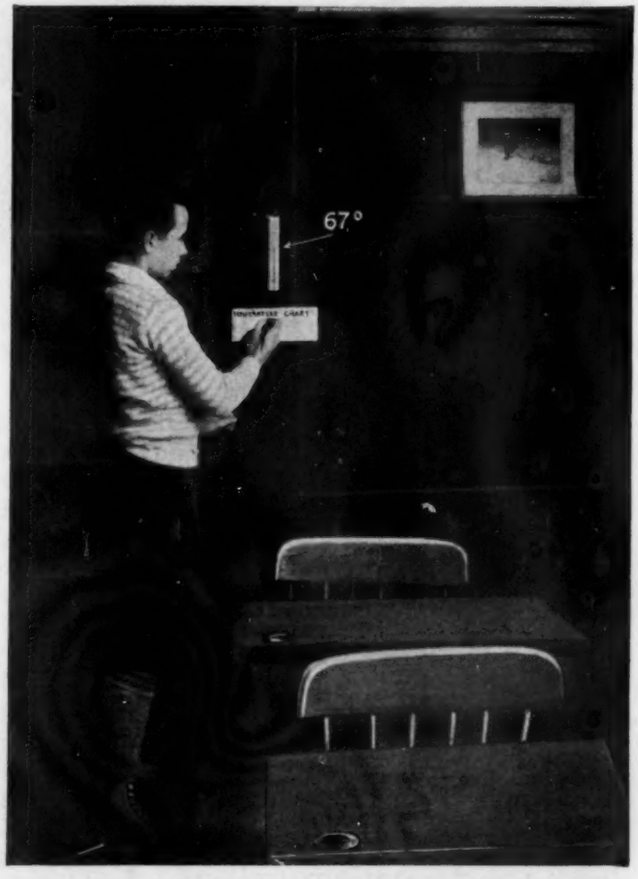
"Yes, George, I guess it will take a lot of courage to buck this kind of thing. Money can do almost anything it wants to do in this country, and there's money enough back of this ventilating business, the Lord knows," replied Ellis.

"Then, there's the expense of running the thing; why, the additional expense for electric current used in each school is appalling. I hate to face the taxpayers with that," Davis ruminated aloud.

Millions in Idle Equipment

"I've heard that in New York City they have millions of dollars invested in idle ventilating equipment, and that other cities also have found it too expensive to run," contributed Ellis.

Just then the doctor came down the stairs and Mr. Davis asked his opinion on Johnny's cold.



Schoolroom temperature should be no higher than 67 or 68 F. Sherman school pupils assist in keeping hourly temperature records.

"George, I'm afraid the boy is in for a light case of pneumonia, but we'll see how he gets through the night. I'll drop in before 9 in the morning."

"Sit down a minute, Doctor, won't you?" invited Davis. "I want to ask you something about ventilation in the schools. Is it true that bad ventilation has anything to do with colds among school children?"

Dr. Brown smiled as he lighted a cigaret. He took a few puffs before he replied. "The exact causes of colds have not been determined, Davis, but most doctors believe ventilation has a great deal to do with it."

"Well now, Doctor, that is a poser, especially when put to a member of the board of education. But I'm interested to know what you think about our new system of ventilation?"

"Personally, I think the ventilation of the schools this winter has been rotten. It has never been ideal, of course, but the mechanical system is much worse than the old window system, as bad as that was.

"I've been reading about the study made by the New York state commission on ventilation," the doctor continued. "You know they found that temperature made a great difference in the health of school children. When the records of two years' study were analyzed, it was found that the amount of respiratory sickness in the rooms with a temperature of 59 to 66.5 F. was about the same; while the rooms having an average temperature of 68.5 showed an 18 per cent excess of absence due to respiratory sickness and a 70 per cent excess of sickness from respiratory diseases among pupils in attendance. They recommended window-gravity ventilation as the most promising for schoolroom use."

The Ellises exchanged glances.

"Now the trouble with these new mechanical systems that blow 30 cubic feet of air per minute per pupil into schoolrooms, in order to comply with the law, is that air to be brought into rooms at such a high velocity must be heated in order to prevent a draft. Sometimes the air that is forced into a room is heated to 100 F. The average room temperature under mechanical ventilation is between 78 and 80 F., sometimes going as high as 90 F. Little attention is paid to the thermometer. In fact some rooms have no thermometers. The teachers in desperation open windows against the rules and then the mechanical system is upset."

"Who is responsible for this grand idea of mechanical ventilation, anyway?" exclaimed Davis.

"The French and the Germans chiefly," replied the doctor. "A French scientist named Lavoisier really originated the practice of ventilation about 150 years ago when he showed by animal experiment that the symptoms experienced in a badly ventilated room could not be attributed to oxygen deficiency but are due rather to the increase in the carbon dioxide. Lavoisier originated the carbon dioxide theory, which now dominates ventilation practice.

On the side of the room opposite the windows are outlets high in the wall. The flags in the openings indicate that the overheated air at the top of the room is passing out.

"Pettenkofer, a German physiologist, declared that carbon dioxide was not the cause of bad ventilation but that it might be a measure of the presence of poisonous organic substances that are excreted into the atmosphere by the human body. To perfect the means for the detection of these substances, which Pettenkofer believed the cause of bad ventilation, he devised a measure for carbon dioxide. It is this measure that ventilating engineers use today in their estimates of the amount of air necessary to dilute these supposed poisons sufficiently to make the air safe to breathe. This is the origin of the '30 cubic feet of air per pupil per minute' idea.

"But the Germans redeemed themselves later, for along came Flügge and his pupils in Breslau with experiments to show conclusively that the ill effects of bad ventilation are due to overheating and not to any chemical change in the atmosphere. This all happened twenty years

ago and experiments in England and in this country have since corroborated the findings of Flügge. Yet the ventilating engineers, the lawmakers and the school people generally are clinging to the older, discredited theories. There is only one thing to do and that is to educate the public until people learn what is scientific ventilation and insist on having the best system for the schools," concluded the doctor.

"That is splendid work for our parent-teacher organizations, isn't it, Sally?" Mrs. Davis suggested to her friend.

"Yes, indeed. Let's propose it at the meeting tomorrow."

"I wish you success in your undertaking, ladies," said the doctor.

"I'm afraid we must be leaving also," said Mrs. Ellis. "I like to get home early to see if the children are all right. Good-night!"

"My way is pretty clearly marked out, isn't it?" asked Mr. Davis. "But I shall have to read up on this subject and get ready for the next meeting of the board. There will be fireworks when I explode all I know."

Open Season for Tularemia

NOW that the winter hunting season is at its height, health bulletins from various departments of health throughout the United States are calling the attention of hunters and housewives to tularemia, a disease found principally among rabbits.

Tularemia is not usually fatal to man and is comparatively rare, but it always means a serious and weakening illness of weeks and sometimes of months. It takes its name from the fact that it was discovered in Tulare County, Calif., where the germ was first identified about fifteen years ago.

Any workers in an occupation in which rabbits are skinned, dressed or cut up are liable to the disease. It is known as "rabbit fever" among market men, many of whom have had it and are now immune. "Let them dress your rabbits, or use rubber gloves if you really want to do the job yourself," suggests the Illinois department of health.

Should Let Easy Shots Go

Hunters are warned to let easy shots go, for any rabbit that seems slothful is a sick rabbit and is a source of danger. The disease is carried among rodents by ticks and flies. About 10 per cent of the rabbits on the market are infected, according to estimates of the U. S. Public Health Service.

It is not necessary to stop the eating of rabbits, however, if they are among your favorite delicacies, for authorities unite in asserting that there is no danger in thoroughly cooked meat. It is in the dressing that the danger lies. In almost every reported case, the victims have acquired the infection through cuts or abrasions of the skin.

The outstanding symptoms are fever and swelling of the lymph glands. Ulcers usually appear around the original site of infection and are slow to heal. Often the fever is mistaken for influenza or typhoid for a few days and later blood tests show the presence of the tularemia germ, which is known as *Bacterium tularense.*

Housewife's Cut Thumb Becomes Infected

In one case, a housewife cut her thumb while dressing a rabbit. The cut developed into an irregular ulcer that did not heal. About a week later various lymph glands became sore and swollen. She had nausea, headache, high fever, chills and extreme prostration and died in two weeks. Blood examined at the hygienic laboratory at Washington, D. C., showed that she had had tularemia.

After the death of this housewife, several rabbits were found dead in the neighborhood of her home, showing that there was probably an epidemic among the hares at the time.

This is one of the few cases in which tularemia has proved fatal, but it always means a long illness and a serious economic loss. No preventive vaccine or serum has been developed yet and no drug has been found to have any specific value in treating tularemia patients. The only way to avoid it, then, is to exercise care in dressing or handling rabbits preparatory to cooking. The hands should be protected by some impervious material and should be immediately sterilized.

Cases of tularemia in human beings have been recognized in thirty-seven states, in the District of Columbia and in Japan. From its original start in the jack-rabbits of the West, it has advanced steadily across the continent until only nine states remain uninvaded—the six New England states, New York, New Jersey and Delaware.

No Substitute for a GOOD DENTIST

By Louis DeArmand

The heads of the first, second and fifth vice presidents are bowed in reverence.

IT IS the conference room of the famous advertising agency, Sellers, Inc. The psychologic moment has arrived and with it Lorado Algers, the $100,000 a year genius who makes millionaires of nonentities over night. As Lorado Algers enters, the heads of the first, second and fifth vice presidents are bowed in reverence, while the client gazes in rapture on the great one.

"Well," roars the genius, "what have you decided?"

"We have a great problem," mumbles the first V. P. "Our client Mr. Foozle thinks our campaign calls for a larger appropriation than he can aff—, that is, he cares to invest in."

The dynamic Algers picks up a tube and reads the wording on its face, "Foozle's Dental Salve."

"What does this sell for now?" the magnificent man inquires.

"Thirty-five cents."

"Thirty-five cents!" Lorado Algers' tone carries his most potent sniff. "Increase the price to fifty cents."

Lorado Algers has gone. A great problem of merchandising has been solved. How rapidly the men in conference now work. Pictures—copy—a slogan. Yes, a slogan; for instance, "Beware your arch enemy—a loose tooth." And a new appeal; let's see, ah, why not "Don't laugh up your sleeve. Know the joys of the open mouth"?

While such campaigns are carried on, what has the dental profession, in which there are not a few but many intelligent men, done to enlighten the gullible public as to these pastes, powders and salves? Very little. The result? Thousands buy Foozle's Dental Salve in the fond belief that forever more their problems are solved, and the nineteen payments on the washing machine, the radio and the car will be paid, while God's in his heaven and all's well in the mouth.

Not all dental preparations on the market are scented axle grease, perfumed chalk or colored water. Many are worthy products but they have limited merit. They are not panaceas for all the ills of the mouth. No one should be so asinine as to believe all that is written about these products.

Any preparation that is strong enough to bleach yellow teeth is powerful enough to injure the enamel of the teeth. Any preparation that will prevent or cure, in its incipient stage, that disease known as pyorrhea should be kept in a glass container and have a glass stopper in the bottle. This epidemic of gargling and tooth swabbing is making specialists in the extraction of teeth affluent. It will make Americans a toothless people, because of the insatiable desire to find a short cut, a sort of correspondence course, in tooth salvation. It simply can't be done.

"Increase the price to fifty cents."

No man can fool a molar that is in "decline," or a front tooth that has no intimate contact with the adjoining gums, by painting it with some highly advertised glycerin compound

flavored with anise. Yet it is going to take tall propaganda work on the part of dentists to make the average American believe this.

Today a man knows instantly what is in the wind when he sees his best friends draw away from him every time he opens his mouth. But does this man visit a dentist? He does not. He waits until he has no friends and then he rushes to the nearest combination lunch-rubber-goods-candy-delicatessen-drug store and consults a $15 a week clerk. He is handed a bottle of halitosis eradicator and a beautifully lithographed carton containing a tube of Foozle's Dental Salve. Why should he pay out money to a dentist when for 89 cents and 42 cents he can cure himself in his own bathroom?

He waits until he has no friends and then visits a $15 a week drug store clerk and is handed a bottle of halitosis eradicator.

The thing he doesn't know is that a decayed tooth is an incipient cesspool, and an unpleasant odor emanating from the mouth is a sign that there are, around his teeth, what the medical advertising quacks call running sores. Not a delightful topic to dwell on but it isn't one-tenth as unpleasant as contact with those who try to conceal such odors with oral douches.

Credit should be given the word hurlers and picture makers who present lurid dental advertisements because they have made Americans mouth-conscious. That's something. But when they intimate in the most subtle way that all one has to do to have a fetching row of teeth is to use a certain preparation, they are simply handing out the famous "Doc" Munyon line.

The teeth of man are fashioned for definite tasks. The front teeth are for biting; the eye-teeth, or cuspids, for tearing; and the bicuspids and molars, for grinding. In the development of man from the nut-cracker to the present day manipulator of a knife and fork, less and less use has been found for the cuspids, and yet of all the teeth these four are usually the last to go. Even with the daintiest of table manners one must bite, and one should do some grinding, even of oatmeal. There are no teeth in the stomach. Bolted food has a two to five hour parking privilege in the stomach and it takes it. Dyspepsia tablets or gum, plus an astringent mouth wash, will not overcome the damage done when one persists in exceeding the speed limit in sending food past the Adam's apple.

Clean your teeth, of course. Use a good mouth wash if you want it. But don't let some advertising copy writer lure you to believe that the dope he is writing about will perform the work a good dentist should do. There is no substitute for a good dentist. The thousands of toothless folk in this land will vouch for that. You may think your teeth give you a good deal of trouble, but wait until you try to eat a luscious slice of raspberry pie with a double set of gutta-percha teeth and a couple of the seeds get under one of your rubber oral fenders.

Sir, you have not the slightest conception of what trouble is until this happens in your own case.

The Baleful Bottle

"OH DEAR, he's dropped it again!" And so he has. His bottle is lying on the grass and he is hanging perilously over the edge of his stroller reaching for it. Luckily it didn't break, so his mother hands it back to him, perhaps wiping off the nipple with a none-too-clean handkerchief.

It is a useful bottle. It rarely breaks, though it gets thrown about a good deal, for it goes on all baby's outings with him. He takes a snifter when he feels inclined, so long as its contents last, and finally goes to sleep sucking on the nipple. He gets a good deal of air in his tummy that way, but when he complains of his pain an unmistakable tone, his mother observes that he is so hungry he is crying for his dinner, and he is taken home so that the bottle may be refilled for his relief.

Has Never Been Boiled

This bottle has served a good purpose in its day. It may once have contained cleaning fluid, patent medicine or even hair tonic, for it is one of those flat affairs and bears a printed label all up and down one side. And thereby hangs a tale. That label says quite plainly, "This bottle has never been boiled," for whoever heard of a label so devoted to its duty that it would withstand the attack of boiling water?

Beyond doubt it received a bath when it gave up its previous occupation and became a baby-silencer. It is quite clean on the outside when it comes into baby's hands. The condition of its interior is a matter for speculation, however. It has a small mouth, just right to fit a nipple over without too great strain, but no self-respecting bottle brush could ever be induced to reduce itself to the size necessary to enter that long, narrow bottle neck, nor could it be persuaded to contort itself sufficiently to pry into the obscure corners and hidden recesses of that sharp-angled interior.

When baby cries and the bottle is empty, it is taken out to the kitchen and well rinsed. It is filled with hot water and thoroughly shaken; not too hot water, for the bottle might crack. It is rinsed several times until it looks quite clear. It is hard to tell about that, though, for the glass is so thick and full of flaws that one cannot be sure about it. Then it is filled with a mixture of condensed milk and water or some patent formula that baby seems to like. It doesn't come out of the icebox because it might hurt him if it was too cold; it has stood on the kitchen table since morning so as to be almost lukewarm. Baby doesn't get fat on it, even though he is given tastes of food at the table besides, but it keeps him fairly quiet anyway. The doctor says he is undernourished and orders a formula for him, but baby does not seem to like it and he surely gets enough to eat, for he has his bottle whenever he cries for it.

This is a much-traveled bottle. It goes out in the stroller, from which it falls at frequent intervals. It goes on street car rides and lies on the seat until it slides off on the floor. It goes on shopping tours tucked into mother's handbag, from which the nipple emerges to brush against all manner of alien objects.

It starts from home at a lukewarmish temperature, but the temperature at which baby gets it depends largely on the weather. It warms itself in the sun in the stroller or gets a chill on a winter shopping tour. Baby doesn't like it very well, but he accepts it as better than nothing.

Doctor Must Decide on Contents

Beware of the baleful bottle! It may be useful and cheap and it has a silencing effect for the moment, but oh! what a world of damage it does! Baby needs a clean bottle, scrubbed, boiled, sterilized, with a sterilized nipple that is kept sterile until it goes into his mouth. If he is going to thrive, he must be fed for nourishment's sake and not for silence, fed at regular hours with nothing between meals but boiled water.

And the contents of the bottle—well, that is for the doctor to decide. The baby may prefer sugar and water but he won't flourish on it. For baby's sake, throw the silencer in the ashcan and start a schedule of regular feeding hours and boiled bottles filled with a prescribed formula at a prescribed temperature.

HEALTH with the Aid of the Footlights

By Louise Franklin Bache

YOU will remember when you were very young, the ordeal of being taken to church and planted in a stiff pew for an hour's sermon, and the joy and relief that you experienced when the clergyman broke away from the solemn trend of his discussion and told a story. All about, sleeping eyes opened, dull faces lighted up, slumped shoulders straightened, heads were raised. It was as invigorating as a fresh, brisk breeze in a stuffy room.

Many public health programs have failed because those who were putting them on sermonized day in and day out with no thought of a break and no thought of a change in methods. Dramatic methods were forgotten.

In the Bible whenever a difficult truth was to be made clear, it was put in the form of a parable, or story. The early church service presented religion in pageant and dance form. In religious and community festivals children always played a part. May Day and Christmas celebrations were in festival form. In fact, many of the customs connected with these holidays survive only because our ancestors told them so dramatically that they have lived.

Puritan America frowned on dramatics of all kinds. Colonial days were too stormy for the portrayal of life in dramatic form and the next decade too poor from the struggle of war. In the schools of those days "piece speaking" was about the farthest height to which the dramatic interest dared soar. Children crooned over the ride of Paul Revere and the story of Barbara Frietchie in singsong manner. If they had

A sugar-coated way of teaching health is by plays. "Mr. Cold, You Can't Catch Me" is the title of the school play being enacted here.

acted or played the part, gone would have been the monotony of their voices and the listlessness of their attitudes.

Social settlements were first to recognize the need of children's plays. Today educators are finding in the children's play all sorts of possibilities. The late President Eliot of Harvard, in speaking of the dramatic instinct, said: "Here is a power over children that ought to be utilized for their good. It is true that the dramatic instinct is very general. So I say that this power is one that ought to be in at least every school in the country, and moreover I believe that it is going to be." President Eliot's prophecy is coming true. Each year sees an increasing demand for children's plays.

From a health play children learn the advantages of good health and the disadvantages of bad health. The dramatic instinct in children is a force that can be utilized to advantage, a force that works in two ways. When the children themselves are actors their intimate association with the part cannot help but make them interested in the subject matter. When plays are produced by children, fathers and mothers and older brothers and sisters are drawn to the presentation place. The more characters there are in a play the larger the audience it draws.

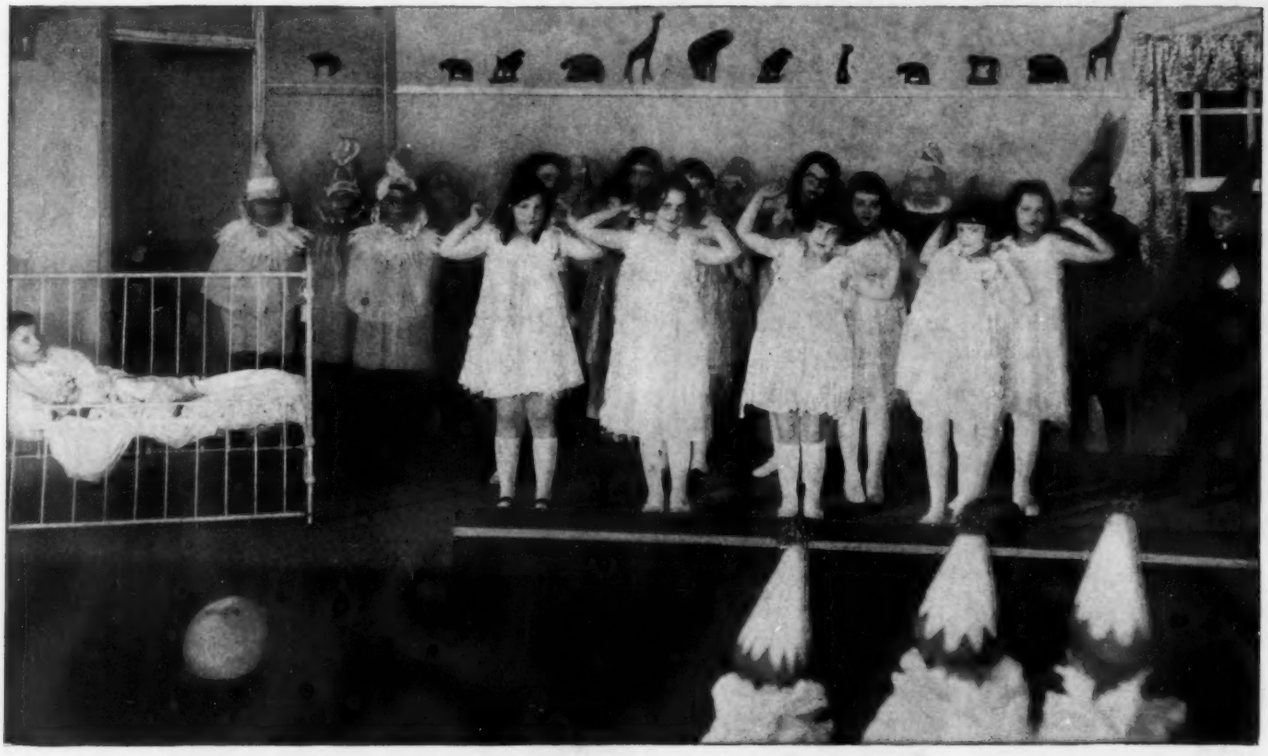
Second grade children are dramatizing health and disease.

One of the greatest things that a children's play, pageant or parade will do is to bring people together. To a great number the theater and even the motion pictures are prohibitive in price. When children put on plays that are free, the audience consists of many persons who are able to get a message that otherwise would be denied them. Story telling, plays, pageants, parades will call forth a crowd when a lecture will draw only a handful.

Syracuse has used story telling, plays, pageants and parades to present its health program to the community. Out of the story grew its other dramatic developments. No one will challenge the value of story telling for children. Hundreds of splendid imaginative fairy tales and lovely bits of literature are presented to children daily. But when it comes to the health story, few are worth while. This is a weak spot in our health educational program. Had we a Barrie, a Kipling or a Grimm to write our health stories, we could pipe the children to health in the miraculous way in which the Pied Piper of Hamelin gained his following.

A story teller for children will find many health stories among the classics if she looks for them long enough. Often the ending of a famous story can be directed into health channels. One of the best collections of health stories is "Health Training in Schools," prepared for the National Tuberculosis Association by Theresa Dansdill. This is used a great deal in the story hours in Syracuse, and many of the health stories have been broadcast over the radio. There is a need for health stories based on some of the newer phases of health work, such as diphtheria prevention. The staff of the health education department itself writes stories of this type, with the directors of health education in the public and parochial schools serving as self-appointed critics. These stories are printed in the local papers and told in the classrooms, thus reaching an audience of thousands of children. Some times the stories are acter by the children. This is the elementary form of dramatic work.

In the Syracuse schools the children are using the simplest form of pantomime to illustrate such songs as "I clean my teeth every morning," "I wash my hands before eating," "I



David, in bed, is being shown the soap and water girls by the health elves.

brush my hair and clean my nails," "I drink milk at every meal," "I come to breakfast with a smiling face." After this come simple character sketches. Then follows the more advanced stage of characterization.

Few Good Health Plays

Unfortunately, in health plays as in health stories, there is little really good material. I must confess that being a carrot or a tomato or a bottle of milk in a health play would never make me an enthusiast for any of these products, but that may be purely a personal dislike to the symbolic form of dramatization. These plays perhaps have their place in the early grades. The harm comes when we try to make the older children into carrots and tomatoes and bottles of milk. Their immediate reaction is that health is a kindergarten subject and one with which older boys and girls are not concerned.

In Syracuse the children are being asked to write their own plays. When a child writes a play on health he begins to find out how little he knows about it. He does some studying and a great deal more thinking, and he ends up by becoming greatly interested in the subject on which he is writing. Syracuse is soon to conduct a contest for health plays written by school children. The subjects will be suggested and certain rules for the contest drawn up. Each school will produce its own play and the prize winning play. Fathers and mothers will want to see the product of their children's pens, and the newspapers will be glad to print stories of the event. Through the simple writing of health plays children, parents and community will become informed on principles of public health.

The Syracuse bureau of health education has published some plays on dental hygiene, colds and diphtheria prevention. As most of these plays are written for school use, the costumes and stage setting are made as simple as possible. To master the text requires few rehearsals. Short health plays of fifteen or twenty minutes' duration are more in demand than long ones.

Wider Interest in Pageants

Pageants have one advantage over plays: The larger cast creates greater community interest. They are splendid vehicles for creating cooperation between various groups. Syracuse used a pageant portraying the history of nursing to bring together the nurses in its five hospitals.

In the same way a health educational program that is put in the form of a pageant interests all sorts of groups, both participants and audience, and serves to put over the message of public health in a clear-cut and colorful manner. After working together in a public health pageant citizens are much more inclined to work together in the community for the projects emphasized in the pageant.

Breakfast Food Facts

By Lulu G. Graves

THOUGH wheat is the most extensively used cereal in this country, rice leads in the world as a whole. Rice is relatively poor in fat and protein but it provides one of the most easily digested forms of starch; thus it may be one of the most completely digested foods. More than other cereals it calls for cream rather than milk when eaten plain.

The common practice of serving rice as a vegetable with meat or as a dessert with eggs is a logical one, as these supply the protein and fat; the use of raisins, lemon juice and other fruits in combination with rice is scientifically sound, as minerals and vitamins are thus supplied, though this custom prevailed before vitamins were known.

Ways of Cooking Rice

As with all cereals, the cooking is an important factor, having much to do with palatability. Many methods of cooking are used. In Japan the rice is washed until the water remains clear and it is cooked in an iron or bronze kettle. Or it is put into cold water and brought to a boil and when the foam and steam appear under the cover of the kettle, it is considered cooked. However, it is retained in the covered kettle until the grains have swollen and separated from each other.

Rice need not be cooked as long as other cereals. When ready to serve the grains should be separate; they will not be if the cereal has been cooked too long. By soaking rice in tepid water until the grains lose their luster, it can be cooked in much less time than otherwise.

Either the whole grain or cream of rice added to omelets, muffins, waffles and griddle cakes gives them a fluffiness and texture that is pleasing.

In India, Japan and other countries in which rice is the staple article of diet, it is combined with foods having a distinctive flavor. We are learning to follow their example. In India, sauces flavored with curry, dishes including salt fish, horseradish, pickled peppers, preserved ginger and other oriental fruits are used; in Japan and China, soy bean curd, chop suey and other combinations of fish and vegetables are used.

In this country we find rice excellent for stuffing peppers (either mixed with chopped meat or plain), to use in stews, to substitute for potato in salads when the price of potatoes goes skyward, or to thicken soups.

Corn may be used for human food in many ways. It is one of the most important crops raised in the United States, and in the season when it is in the milk stage, it may be used as a vegetable, though the developed sweet corn is more popular for this purpose.

Corn has more fat than any of the other grains except oats. The greater part of the fat is in or around the germ of the kernel, and this is the part of the grain that is difficult to keep from spoiling. For this reason the greater part of the germ is removed from most of our corn products. Hominy, corn flour and corn starch are some of the forms in which corn is utilized for food, but our attention will be confined to corn meal.

Making Corn Meal

Both white and yellow corn are used in the making of meal. The white is in greater favor in the south and yellow is preferred in other sections of the country. When the corn is ground between stones, the skin and germ are not removed before grinding, but they are bolted out afterward. Enough of the germ may be

retained to give a rich flavor to the meal, but it does not keep well and is usually made for local use only.

In grinding between steel rollers, a large part of the skin and germ is removed. For this reason the meal made by this method keeps well and may be marketed anywhere. Meal made by this process is dry and granular. The stone ground meal feels soft to the touch. Because of these differences in types, recipes that are well adapted to one kind cannot be followed implicitly with another.

Corn meal may be substituted in part or in whole for wheat flour in making muffins, griddle cakes, waffles and other forms of quick breads. These, with the many recipes for corn meal mush, corn bread, Indian pudding and combinations with meat, particularly bacon and pork, afford means of introducing dishes in the menu that are economical and easy to prepare.

Corn meal and oatmeal are considered hearty cereals and are well adapted to the diet of those who are engaged in occupations calling for physical exertion and of children in the active, growing stage. They contain more fat than other cereals but not nearly enough to comply with the requirements of the body.

Leftover cooked cereals need not be wasted. If a small amount remains it may be added to the batter of muffins or griddle cakes or used to thicken soups or stews. In larger amounts the cold cereal may be molded, cut in slices and fried; or it may be cut in cubes, mixed with chopped ham or sausage, put in a baking dish, covered with white sauce (or tomato sauce) and buttered crumbs, and browned in the oven.

An Anniversary Party for Diabetics

By Shields Warren

BIRTHDAY and anniversary parties of all sorts are familiar occurrences, but a recent party held at the New England Deaconess Hospital was unique. It was a party to celebrate the tenth anniversary of the discovery of diabetes in a girl now a junior in college. The guests were fifty of the more than 200 diabetic children now being taken care of in the diabetic clinic at the Deaconess Hospital.

Many children were too far away to come and wished that some one would write them about it. One little girl in Galveston, Texas, who was unable to come wrote, "Won't you please send me an account of the party?" She wanted to hear about the children crowding in, looking over their favors, listening to the songs and laughing at each other's antics. But I am writing not only to her but to many other diabetic children, all of whom, I hope, are as plump and lively as the youngsters at this anniversary party.

The doctors at the party could not help contrasting in their minds these children with the diabetic children of five years before. Then they were thin, puny, listless, some with only a short period of life before them. The best that could be held out for many was a life of chronic invalidism with the menace of disease constantly over them.

The discovery of insulin has brought about this change and has given the diabetic child not only a hope of life but the hope of normal activity, both of mind and of body. Yet insulin alone, wonderful as it is, could not have performed this miracle. Insulin, reinforced by careful treatment, by knowledge of foods and of things to be guarded against, has given these boys and girls plump, rosy cheeks and active muscular bodies and alert minds.

One little girl said, "I am all right except for my pancreas, and as long as insulin looks after that for me I don't see but what I am all right."

This is probably the first diabetic anniversary party, for up until this time it has been unusual to have enough well diabetic children to have a party; however, such observances may soon be commonplaces as the menace of diabetes is fast decreasing. In the last year only three out of 234 diabetic children died, and it would take a keen and trained observer to know that the others were suffering from diabetes.

Modern miracles can be explained by the same science that has brought them about. Understanding and cooperation are necessary for the miracles of science, and this is perhaps true in the control of diabetes as in no other of the modern miracles. It is not enough to know how many units of insulin diabetic children need, and to take them regularly. They must know how much food they can eat and what kinds, and they must be able to tread the narrow path between the Scylla of not enough insulin and the Charybdis of too much. Only by the knowledge of what their diet should be, and a Spartan spirit of pertinacity in holding to it can these children retain the ruddy cheeks and active minds and bodies that they possessed at the tenth diabetic anniversary.

TUBERCULOUS PHYSICIANS

and their Contributions

By J. A. Myers

IN EVERY age great people have lived, but many of them have died without their greatness becoming generally appreciated. Others have lived and died and their greatness has come to light only after years, decades and even centuries have passed; while in others greatness has been at least partially appreciated during their lifetime. The qualifications for a life of greatness that each of us would specify might vary considerably, but I believe that any one who lives a self-sacrificing life in the service of others deserves a place among the great of all time.

Of medical men and women the world is apt to think that contributions are made only by those who present outstanding discoveries in the diagnosis and treatment of disease or who offer something of scientific value. Because of the great diversity of subjects studied, the long years of training required for admission to the medical profession, and the array of temperaments and individualities admitted, is it not logical to expect not only such contributions but also many of a different nature? In fact Schiller and Keats, although physicians, made their most outstanding contributions in fields quite apart from medicine.

Schiller, poet, dramatist and historian, was also a physician; he died of tuberculosis.

Johann Friedrich Schiller was the son of a barber-surgeon in the Bavarian army. As a boy he studied Latin under a village pastor, for whom he developed such great admiration that he resolved first to enter the ministry as his life work.

It happened that the Duke of Wurttemberg established a school for the sons of his military officers. Although the family was strongly in favor of Schiller becoming a minister they did not feel that it was wise to offend the duke, so they enrolled their son for six years' training in this school.

Here Schiller took up the study of law, not from choice, but because the duke had suggested it. He proved to have a great dislike for it, and, in 1775, when a department of medicine was established in the same school, he transferred to medicine, not because he cared particularly for it, but it seemed to be the lesser of two evils. He was interested more in the literary field and with some friends founded a literary club. As much time as he could smuggle from his medical studies he devoted to reading and writing, and in fact he would even feign illness and work with feverish energy on a manuscript entitled "The Robbers," which proved to be his first play and one which brought his name before the world.

In 1780, this was finished and he was appointed physician to a regiment stationed at Stuttgart on a small salary. This meant that he must still wear a uniform and submit to a certain measure of routine. He was greatly disappointed, after studying for seven years, to find that he must hold a position offering no opportunity for development.

With the appearance of his play, "The Robbers," the Duke was greatly incensed and at one time placed him under arrest for two weeks and later informed him he was to attend to business and write no more comedies. Schiller then wrote a very humble letter to the duke in which he begged to be allowed time and liberty to continue his literary work. The duke replied that if he did not immediately drop the subject he would be arrested. By this time Schiller was convinced of the absolute impossibility of any development there, so he decided to try to escape from Wurttemberg.

He had friends who helped him get away, and they succeeded in keeping secret his where-

abouts. He next produced "Fiesco," a tragedy entitled "Louise Miller" and "Don Carlos."

He became a friend of Goethe, who helped him greatly. In the spring of 1789 he was appointed professor of history at Jena. Just one year later his health broke. He developed what at first was thought to be pneumonia, but which proved to be pulmonary tuberculosis. After that time during his remissions he worked diligently producing "The Thirty Years War," "Thalia," "Wallenstein," "Mary Stuart," "The Maid of Orleans," "William Tell" and "Warbeck."

In February, 1805, he was prostrated and, being a physician, knew the end was near. During his long illness he had tried everything that was at that time thought to be helpful in the treatment of his disease. He had led a secluded life and it was not, perhaps, until later years that the world fully realized that one of the immortals had passed on into the immortality of eternal fame.

The Parents' Part in School Health

By Florence A. Sherman

PARENTS may aid the school health program in the following ways:

1. By teaching children early in life good health habits, in respect to sleep, baths, food, water, toilet habits, posture, breathing, exercise, rest, play and cheerfulness.

2. By being enthusiastic about health in the home, each member of the family practicing a daily health program so as to create interest among the children. "Keep well" should be the slogan.

3. By having at least once a year a health examination for each member of the family.

4. By seeing to it that the children enter school with no physical handicaps, and so are able to meet the demands of school life, being less liable to repeated absences because of illness.

5. By giving prompt attention to children already in school in whom the school doctor finds physical defects, such as decayed teeth, enlarged thyroid gland, poor nutrition, heart and lung disorders, spinal and foot defects, speech defects and abnormal conditions of skin and scalp.

6. By permitting sufficient removal of clothing by the school doctor to make possible a thorough examination.

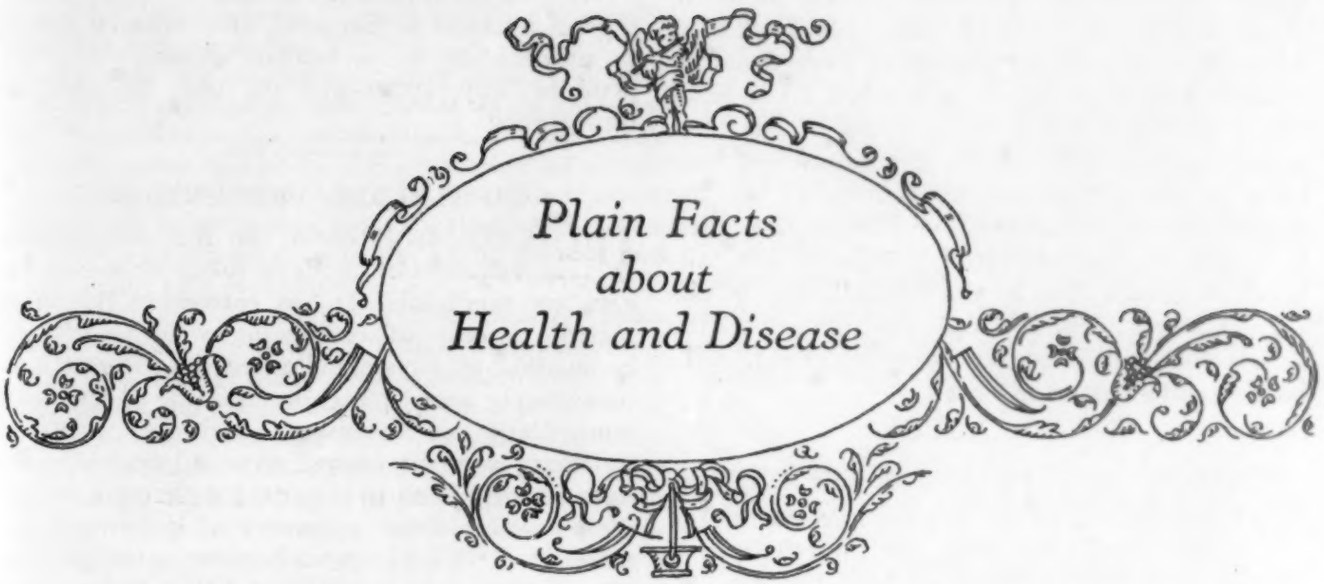
7. By seeing that the school doctor is appointed early in the school year (making sure that the best, not the cheapest, is chosen), in order that defects found may be corrected as soon as possible. Children should receive as skilful attention as livestock.

8. By being interested in the appointment of the teacher, making sure she is healthy, knowing her and seeing to it that she has a comfortable and pleasant place in which to live.

9. By providing clean, sanitary and attractive school buildings having suitable, healthful equipment, as follows: Pure drinking water, porcelain covered water containers, individual drinking cups, facilities for washing the hands, paper towels, liquid soap, sanitary toilets, toilet paper, a heating system or a properly placed and jacketed stove, proper lighting from left and rear, window shades, good ventilation (at least two window boards and screens for every room), a thermometer (properly placed), healthful, comfortable and adjustable seats and desks, a screen for use during the school doctor's examination, a door mat and the required playground space, kept in a sanitary condition.

Parents can see to it that their children get plenty of sleep, in spite of the radio, the movies and other attractions.

10. By visiting the school, knowing the teachers, doctor and school nurse and by making the school supplementary to the home in the care of the children's health.



A GERM DOUBTER

THERE are none so blind as those who will not see. The bigoted proponent of anti-vaccination, antivivisection, or anti-everything in the field of modern science is not to be convinced by anything short of an attack of some serious disease.

The Starry Cross, formerly *The Journal of Zoophily,* is published monthly under the auspices of the American Antivivisection Society. Its editor is one Robert R. Logan.

The leading editorial in the issue of this publication for September, 1927, is entitled "Do Germs Cause Disease?" If such a question had been asked about the time of the Revolutionary War or indeed at any time previous to the significant observations of Louis Pasteur, one could have excused the questioner. In those days actual experimentation was rare, knowledge was not widely diffused, men were still under the spell of blind belief rather than the desire for real investigation.

Today the man who urges that germs do not cause disease and who attempts to get around the actual proof by sophistic reasoning rather than by bringing forward actual evidence to disprove the things that are generally accepted, merely assumes the rôle of bigot. The man who argues that antityphoid vaccination does not aid in preventing the disease is unfamiliar with the contrast in death rates in the Spanish American War and in the World War. The man who says that "the number of deaths from diphtheria per unit of population, though subject to cycles of rise and fall, show no real diminution since 1895, when antitoxin was first introduced," is not only writing bad grammar but perpetrating an actual falsehood.

Mr. Logan is not likely to be convinced by statistical evidence; he doesn't want to be. The way for Mr. Logan to convince himself that the typhoid germ causes typhoid is for Mr. Logan to take a sufficient dosage of typhoid bacteria. Mr. Logan will then have typhoid fever and he will be convinced. Under such circumstances Mr. Logan might depart this mundane sphere. The loss would be significant. But think of the satisfaction of knowing the truth. Of course antivivisectionists do want to know the truth! Or do they?

M. F.

SMALL TOWN MILK SUPPLIES

NINETY-SEVEN out of 117 towns and cities recently surveyed by the American Child Health Association reported that they had no pasteurized milk. In contrast, thirty of sixty-one large cities of over 100,000 population reported 90 per cent or more of their milk supplies pasteurized.

It is interesting to note that people in small towns apparently consume less milk than do those in the cities. The average per capita consumption of milk in ninety-nine of the towns studied was one half pint, whereas among eighty-six cities of from 40,000 to 70,000 population the per capita consumption was 0.85 pint. A special survey of the matter of tuberculin testing of cattle indicated that only 43 per cent of the surveyed cities reported that the cattle supplying their milk had been tuberculin tested within the year.

If milk supply control is an indication of the sanitary development of a community, the health department practice of the small towns of this country is still in its infancy. As emphasized by the report of the American Child

Health Association, the milk supply of these towns is little better in sanitary quality than it would have been if the process of pasteurization of milk had never been discovered. The milk when produced has a high count of bacteria, sometimes is visibly dirty; the number of bacteria increases because of failure to ice the supply during its handling and the milk is used raw without pasteurization. Twenty-five millions of people live in the small towns of the United States. These people are themselves the subjects of, as well as the disseminators of, milk-borne epidemics of disease. M. F.

TOBACCO AND PHYSICAL EFFICIENCY

THE warfare as to the relative harmfulness of tobacco continues with the marshaling of various scientific opinions on both the pro and anti fronts. A committee to study the tobacco problem, which includes the names of many distinguished physicians, has just published a collection of the literature on the subject made by Prof. Pierre Schrumpf-Pierron of the University of Cairo. He lists a number of serious symptoms that may result from chronic tobacco poisoning but points out that many of the same symptoms may also appear following infections.

The abuse of tobacco is the cause of many disturbances of the heart, particularly of the rhythm of its beat, although it does not appear to have been proved that the smoking of tobacco even in excess will cause actual visible changes in the heart or in the blood vessels. The chronic laryngitis that is associated with smoking affects those who inhale smoke and there may be disturbances of the digestion. The author concludes that the problem with tobacco is about the same as that with alcohol. A sound person may bear moderate dosages without injury, but the same dosages may be serious in their results on the person who is not sound.

The moderate use of tobacco may bring on a series of disturbances that may eventuate seriously. Cigaret smoking has increased steadily since the war and is apparently more easily abused than is the smoking of cigars or of a pipe. Furthermore, the cigaret smoker is more likely to inhale than are smokers by other methods of smoking tobacco. Professor Schrumpf-Pierron is convinced that continued studies are necessary to find out exactly what the effects of tobacco on the human body may be, and he deprecates the exaggeration that has been given to the attacks on tobacco which place it in some instances on the same plane as morphine and cocaine. The public knows better and such attacks merely react against the attackers.

The general conclusion is that excessive smoking of tobacco is harmful, but tobacco taken in moderation by a healthy person does not produce any symptoms or any changes of importance. M. F.

DIPHTHERIA PREVENTION

DIPHTHERIA antitoxin is the outstanding contribution of modern medical science to curative medicine. It has converted the most terrible enemy of childhood, with which the generation of physicians antecedent to our own was utterly unable to cope, into one of the most controllable of diseases. And yet, although antitoxin was discovered over thirty-five years ago, and has been in general use throughout the civilized world for a quarter of a century, the number of children who become infected with the disease has diminished little during that period. The death rate from diphtheria in the registration area of the United States has fallen, however, from 43.3 per 100,000 of the population in 1900 to 9.4 per 100,000 in 1924. Notwithstanding this fact it is still the "captain of death" among the diseases of early life. Measles caused in 1924 only 8.6, whooping cough 8.3 and scarlet fever only 3.1 deaths per 100,000.

More than a decade ago the medical profession began to realize that if the world is to be rid of this scourge of childhood, reliance must be placed on preventive rather than on curative measures.

Antitoxin is used both as a cure and a preventive of diphtheria, but the so-called passive immunity conferred by it is of brief duration and has been of little avail in protecting children from infection. The discovery of the Schick test, in 1913, by which it is possible to ascertain the susceptibility of a person to diphtheria, and the subsequent discovery that minute doses of diphtheria toxin, guarded by the correctly balanced dose of antitoxin, can be used to secure an active, enduring immunity, placed in the hands of physicians an adequate defense against the ravages of this disease.

The education of the public to the tremendous significance and possibilities of this discovery is being vigorously advanced in several states and in many communities. Already the beneficent results are being reported, as in Auburn, N. Y., where not a single death from diphtheria has occurred for three and one-half years; Mamaroneck, N. Y., with no deaths for four years; Oswego, N. Y., with no deaths for four years and only four cases reported in 1924.

The slogan in New York state is "No Diphtheria in New York after 1930," and it begins to look as if this goal might be reached. The state and local health departments, volunteer

health agencies, and above all the practitioners of medicine are energetically pushing this anti-diphtheria campaign.

Parents are coming to realize their obligation to their children in this matter as in the case of vaccination against smallpox. It has been much easier to secure the protection of school children than of children of preschool years, although it is in this early period of life that children are most susceptible to the disease and the death rate is highest.

There is in most infants an immunity transmitted from the mother, which lasts about six months. As children are confined largely to the home up to the age of 2 or 3 years most parents have thought it unnecessary to have toxin-antitoxin administered until after the age of 2. As infants begin to be susceptible soon after the age of 6 months—and are more or less liable to exposure to contact with a diphtheria carrier at any time—it is wise to have the child inoculated within the first years of life. The slight reactions which sometimes accompany the inoculation are seldom seen in infants. When it seems desirable to determine the susceptibility of the child to the disease the Schick test can be made in connection with the first of the usual three inoculations of toxin-antitoxin.

J. M. D.

THE WORK OF THE HEART

THE ability of the human body to do work depends on the capacity of the heart to pump the blood and the capacity of the lungs to supply the blood with oxygen when it circulates through them. According to various estimates, about 100 cubic centimeters, or one fourth of a pint of blood, flows through the lungs and is pumped on by the heart to the tissues of the body for each four cubic centimeters of oxygen that is consumed while the human being rests. The moment a man exercises or moves his muscles he needs more oxygen. The only way for him to get more oxygen is for the heart to beat more rapidly or more powerfully and to force more blood through the lungs.

Members of the department of physiology of the Yale University medical school studied the circulation of the blood on a large number of persons. They found that the circulation of men who take little exercise approximately doubles when they pass from a state of rest to one of exercise. The circulation of men accustomed to athletics tripled when passing from rest to exercise.

The flow of blood is adjusted in a remarkable manner to the needs of the person under various conditions. In athletes the pulse rate tends to be slower and the stroke volume of the heart distinctly larger during both rest and exercise than in nonathletes. Thus the athlete's heart is above the normal in its efficiency. When the athlete gets his "second wind" his pulse and his breathing rate drop from the excessive speed that they develop at the beginning of exercise and for a time remain regular, which indicates that the supply of oxygen by the circulation is equivalent to the demand of the effort. When symptoms of fatigue develop and the individual becomes unable to respond with greater exertion, the pulse rate rises again and increasing demand results in collapse.

M. F.

THE INGENUITY OF QUACKERY

QUACKERY in America presents a never ending panorama of futuristic pictures. Hardly has a new discovery been announced in medicine before some inspired quack adapts it to charlatanism. The discovery of radium and its actual uses in the treatment of cancer and new growths has given rise to radium packs, radium pads and radium drinking water, as well as radium lights, which are without the slightest virtues but which are vaunted as being possessed of a high degree of radioactivity. It has not been shown that they would accomplish anything, even if they were radioactive. Yet claims are made that they will cure everything from pernicious anemia to high blood pressure and that they will rejuvenate the tottering fossil whose mind cannot be freed from reminiscences of his youthful exploits.

The newer knowledge of physics and of electricity gave rise not only to the quackeries of Albert Abrams but also to the magic horse collar of Gaylord Wilshire, who claimed to magnetize the iron in the blood and thus to cure all diseases. It is no more possible to magnetize the iron of the blood than to lift up a piece of spinach with a magnet.

The announcement of the virtue of ultraviolet rays in preventing rickets and perhaps in increasing the body's resistance has resulted in a flood upon the market of useless violet colored incandescent lamps; these do not provide a particle of the invisible ultraviolet rays that are found in the carbon arc and the mercury vapor quartz light.

The success of one faith healing cult gives birth to thousands of faith healing offshoots and causes ministers who ought to be free from charlatanism to yield to the glamor of publicity and to seek a place in the sun by claims of religious healing by the laying on of hands.

The magnificent accomplishments of plastic surgery as performed during the war let loose

upon silly women a dozen plastic surgical charlatans, who attempt to reconstruct the hopelessly stupid and uninteresting faces that seek beauty through the knife. The craze for thinness seizes upon the public like a mania and dispensaries for the tuberculous begin to report an increasing incidence of this disease among young women who have starved themselves into lowered resistance.

P. T. Barnum said that there was a sucker born every minute. Joseph Jastrow modified the phrase by the saying that there was also born a swindler or a charlatan every hour to take care of sixty suckers. The ratio has not been changed since the earliest times, and will probably not be in the future until eugenics has worked its promised mysterious wonders.

M. F.

RAW, COOKED AND PREDIGESTED CEREALS

THE articles that are being published in HYGEIA relative to various breakfast foods have attracted much attention. Apparently almost every one eats a breakfast food once in a while, and children partake of one or another every day.

Years ago the common breakfast food was oatmeal or farina, and beyond these two substances there was little variation. Now there are hundreds of brands from which to choose. The foods vary in taste, flavor, texture, nutritional qualities, digestibility and many other factors. Some are ready to eat as purchased, some have to be heated, some have to be boiled, others can be used in all sorts of combinations.

Dr. Carl S. Miner, well known as an industrial chemist, writes to elaborate somewhat a statement in the article by Lulu G. Graves, called "Breakfast Food Facts." He says incidentally that the article was so excellent on the whole and so likely to be productive of good that it seems ungracious to criticize it even slightly.

In her article Miss Graves lists as one of the class of cereals "partially cooked cereals generally prepared by partially cooking by steam, then rolling into flakes as Pettijohn's rolled oats." In the process of manufacturing rolled oats, according to Dr. Miner, the groats, after being dried, are given a steam treatment which softens them sufficiently so that they may be successfully rolled into flakes. This process apparently forms the only basis for the claim that the product is precooked.

Obviously much depends on one's definition of cooking. The real purpose of cooking a cereal is to change its raw starch to a more digestible form. Careful microscopic and chemical tests on the starch of most of the rolled oats products advertised as "precooked" do not show any substantial differences between the starch of these products, and that of untreated oats. The user will therefore understand that "precooked" does not really mean "cooked." It merely means steamed and softened, and the cooking, as Miss Graves also emphasizes, must be just as thorough with one product as with the others.

M. F.

Looking Forward to February

AMONG the feature articles scheduled for the February issue are the following:

FAMOUS PAINTINGS OF PHYSICIANS
By Catherine Beach Ely

HEALTH HAZARDS ON A WORLD TOUR
By Arthur Torrance, M.D.

DEAFNESS, WITH ALL THE MODERN CONVENIENCES
By Gladys Lloyd

Other articles concern x-rays, food, mass athletics, cleft palate, immunity from disease and an array of subjects of general and of special interest.

"JUNIOR"

JUNIOR AND MR, GERM

BY

HOWARD W, HAGGARD

"MR, GERM"

CHAPTER I

The Strange Adventure Begins

THE afternoon on which the strange adventure happened was hot. Junior lay on the grass in his yard in the shade of the apple tree near the fence. He was tired, but of course he did not want to go to sleep.

A big blue-green fly sailed through the air and landed right on the end of Junior's nose. Junior lay still and squinted his two eyes to look at the fly on the end of his nose. Looked at in that way, the fly seemed big and out of shape and strange. And then the fly bit him.

"Oh!" cried Junior, and jumped, for it hurt when the fly bit the end of his nose.

The fly jumped too and flew away a few feet to the top of a box, and sat there rubbing its wings with its hind legs. But it did not sit there long, for it saw Junior's ankles. It flew over and started to bite them, but Junior remembered the bite on the end of his nose and hit at the fly. His hand landed with a bang on his leg and Junior wondered whether it hurt more to be bitten by the fly or to hit himself on the leg.

Of course the fly got out of the way before the hand landed. It flew in circles about Junior's head. Although he could not see its face, Junior was sure the fly was laughing at him. Its buzz sounded just as if it were laughing.

UGH! HOW I HATE SOAP AND WATER!

With a buzz-buzz the fly landed on Junior's cheek. Junior did not think it would be at all funny to slap himself in the face and not even hurt the fly. So instead of hitting at it, he shook his head. But that hurt too, for Junior's head was resting on a small rock in the grass, and the rock scratched him as his head turned on it. The fly jumped a little way into the air, flew in circles about Junior's face, and buzzed and buzzed as though it were laughing with all its might.

Junior did something that he should never have done. He became angry. He waved his hands about his face to chase the fly away. Then, bang! Junior's left hand hit his nose right where the fly had bitten him before.

Right then and there Junior made a wish. It was not a nice wish, but he made it anyway. He said:

"Mr. Fly, I wish you were tired and I wish there was a little, tiny bit of a fly to bother you; a fly as much smaller than you as you are smaller than I. I wish it would bite you on the end of the nose and that you would slap the end of your own nose just as I did. I should like to be that little fly."

Junior had hardly finished saying these words when the strange adventure began.

He seemed to be falling asleep. As his eyes closed he felt his hands growing smaller, his feet growing smaller, and his legs growing smaller, and he seemed to grow smaller all over.

Suddenly Junior's eyes came open with a jerk. He was wide awake again. Everything had changed. When he had started to fall asleep one tall apple tree was over him, the short grass was all about him, and across the yard he could see the big white house in which he lived. Now he was in the middle of a great forest. Tall green trees grew all about him and the ground underneath was covered with great rocks. There was no earth at all, just rock everywhere. There was something strange about the trees. They were green all the way down to the ground and they did not have any branches. The tall flat leaves went from between the rocks straight up into the air almost out of sight. They looked as grass might look if it were a million times bigger than it really is.

Rocks do not make a comfortable bed; at least that is what Junior thought. He started to stand up but there was something heavy on his chest. For the first time he noticed that he was not alone in the forest.

Seated upon Junior's chest was a most peculiar little man. He was round and fat, and looked to Junior as if he were no bigger than a grain of sand. He had no legs worth calling legs and not much more for arms; just a single short little finger on each side where his arms ought to have been. On the top of his fat round head was a big tall hat that came down over his head and made his ears stick out straight on each side.

This peculiar little man was looking straight at Junior. As he saw Junior looking at him he smiled. He had a very pleasant smile.

For a minute, perhaps longer, Junior stared at the little man. Of course it was not polite of Junior to stare in that manner. I think though that I, or even you, might have stared too if we found a little fat round man no bigger than a grain of sand with scarcely any legs and scarcely any arms sitting on us.

Finally Junior smiled and asked just one polite question:

"What is your name, and who are you, and where am I, and what are you doing sitting on my chest, and where is my house, and what are these funny trees, and, and, and ———."

CHAPTER II

Junior Meets Harold Augustus Germ

WHEN Junior asked that one polite question of the strange little man sitting on his chest, the strange little man smiled still more. Taking his tall round hat on the end of one short little arm he made a deep polite bow to Junior.

"My dear Junior," said he, "I am sure you will forgive me for calling you Junior on what would seem our first meeting, but you see I have known you for a very long time. Yes, indeed, I have known you a long time. In fact, I have been living on your neck for nearly two days."

"What!" cried Junior, "You have been living on my neck for two days!"

Junior felt his neck all the way around to see if there were any more of the strange little men hanging to it. He did not find any.

"What on earth do you mean by saying you have been living on my neck?"

"Aha!" replied the little man. "You are impatient. Let us take one thing at a time." He bowed very deeply, so deeply that he rolled over on the top of his head. There he was perched upside down on the top of his tall hat looking up at Junior. He did not stop smiling though, and went right on talking as if nothing had happened.

"I have a most patient disposition," he murmured, "but you can see that having no legs to speak of really has disadvantages. Then, too, I think we could continue our edifying conversation in a more appropriate manner———"

"What do 'edifying' and 'appropriate' mean?" interrupted Junior.

The little man kept on smiling but he seemed a trifle irritated when he spoke.

"Kindly pick me up and put me on the rocks beside you and then you can sit up. Place me right side up with care, please."

Junior picked up the little man and placed him a short distance away and then he too sat up.

"Now," said the little man, bowing once more but this time being careful not to fall over. He was not careful enough, though, and when he bowed forward he hit his head on a rock in front of him. He straightened up quickly, but he leaned too far backward and hit his head on another rock behind him. His head bounded off the second rock and the queer little man rolled over two or three times. When he stopped rolling he was lying on his round back still looking at Junior and still smiling.

"Now," he said once more, "you have asked me a number of questions. The first of these, I believe, was the question of who I am. I, sir, am Harold Augustus Germ from the country of Bacteria.

"Next you wished to know where you are. You are sitting on the ground in the grass under the big tree in your side yard. These funny trees, as you call them, are blades of grass. I do not think that 'funny' is the right word to use. A funny thing is one that makes you laugh. Ever since you asked me about the 'funny grass' I have tried to see what was funny, for I dearly love to laugh. I can see nothing funny in it.

"I have now answered all of your questions. If you will allow me, sir, I wish to recite a short poem which I have just remembered."

"Hold on a minute," interrupted Junior. "I thought that germs were so very, very tiny that no one could see them without some sort of spyglass, or telescope, or microscope, or some such thing. You seem big enough. And what do you mean by saying that you were living on my neck? I do not really want to say that you are telling a fib, but it is very hard to believe. I wash my neck!"

"Yes," said Mr. Germ, "you do wash your neck and that is why I stayed there for two days. If you had washed your neck as carefully as your mother does I would not have been there. Ugh! Ugh! Ugh! How I hate soap and water!"

Mr. Germ frowned and trembled and shivered until he spun around on his back like a top.

"Ugh! Ugh!" he cried. "How I hate soap and water!"

"So do I," said Junior, "but what I want to know is this: How does it happen that I did not feel you on my neck if you were as big as you are now?"

"I am no bigger than I always am," replied Mr. Germ. "You are smaller. Before you went to sleep under the apple tree you were many million times bigger than I am. You were so big that you could not see me. Now you are small and you can see me."

"Yes," said Junior, "I have become smaller. I can see that. I see too that this forest is nothing but the grass in the lawn and I suppose these rocks are grains of sand and dirt in the yard. Even if I have become very tiny I still feel all right, except about one thing. Mr. Germ, were you telling me the truth when you said that you were on my neck for two days?"

"Certainly I was," replied Mr. Germ; "I was sitting right behind your left ear but you could not see me or feel me because, until now, you were so big that you could not have seen me even if I had been right in front of your face. I knew I was safe behind your ear because you do not wash there unless your mother does it for you. Ugh! Ugh! How I hate soap and water! How I hate them!"

Mr. Germ rocked back and forth and tears came into his eyes. He finally became more calm and continued:

"Last Monday a fly left me behind your left ear. I think it was the same fly that bit you on the nose before you went to sleep. It was very warm and comfortable on the skin behind your ear so I raised a family there. By Tuesday I had four thousand three hundred twenty-one; or was it thirteen thousand four hundred twenty-one, children? It was some such number. They were all my children or grandchildren or great grandchildren or great-great grandchildren. We were waiting there very patiently."

Mr. Germ became sad again and rocked slowly back and forth.

"Patiently," he said, "yes, very patiently, we were waiting. Then this morning your mother made you leave the breakfast table and wash behind your ears. It was sad, sad, sad."

Mr. Germ rocked faster and he wept. The tears ran over his fat face and each time he rocked backward they ran into his tall round hat. He did not seem to mind the washing his head was getting and between sobs went on talking.

"Sob-sob-sob," cried Mr. Germ. "How sad! How sad! Your mother made you wash behind your ears. Even then you did not wash very well but you did get some soap and water behind your ears.

"Just think what happened to my family; four thousand three hundred twenty-one (or was it thirteen thousand four hundred twenty-one?) of my children, and grandchildren, and great grandchildren, and great-great grandchildren were washed away. There I was, left alone. I was far behind your ear and you did not reach me with the soap and water. How I hate soap and water. It nearly kills me to think about it—especially hot water with lots of soap in it!"

THERE HE WAS PERCHED UPSIDE DOWN-!

"Hum!" said Junior unfeelingly, "I am glad I got rid of your family. Were there any more of your relatives roosting on me?"

"Oh, yes!" replied Mr. Germ, smiling again. The tears stopped running into his tall hat and just in time too, for it was nearly full. "Oh, yes, indeed! A second cousin of mine was living in your mouth. He told me that you were careless about washing your teeth and, if you forgot to wash them tonight, that by tomorrow he would have a family of four thousand two hundred sixty-two or perhaps four thousand two hundred sixty-four children and grandchildren."

"In my mouth," cried Junior, "he was in my mouth with my teeth! Oh! Oh! Where is he now?"

Junior felt with his finger all around inside of his mouth. He could find nothing there except his teeth and tongue.

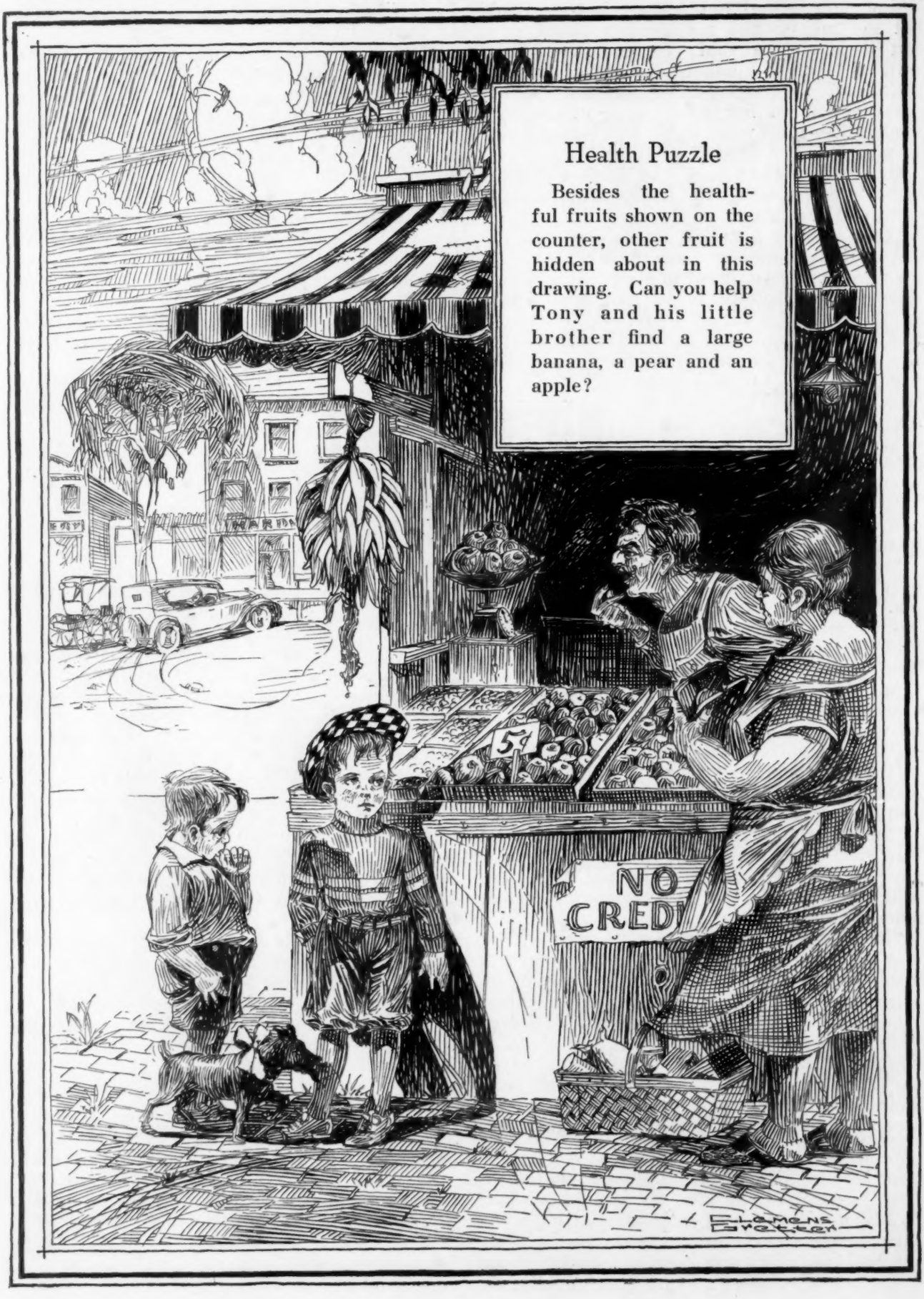
"Oh," said Mr. Germ with a somewhat bored air. "You lost him. That was sad too." For a moment it looked as if Mr. Germ was going to cry again but he managed to keep back the tears. "You see, when you became smaller my second cousin filled up your whole mouth and that made you sneeze. You sneezed so hard that he popped right out of your mouth and went sailing across the top of the grass. Fortunately you do not cover your mouth with your handkerchief when you sneeze, so he got away nicely. I do hope for his sake that he lands in the mouth of some one else where he will have a nice home.

"He told me that you often forgot to use your toothbrush. He really had great hopes of raising a large family in your mouth. It is comfortable there. My second cousin can hollow out a tooth and live with his whole family in the hole he makes just as a woodpecker lives in a hole in a tree."

"That hurts," said Junior; "it hurts like everything to have a hole in a tooth and when I do my mother takes me to the dentist. I am glad I got rid of that cousin of yours. Whee!"

"Of course," continued Mr. Germ, "he has his troubles too. He does not like a toothbrush and tooth paste any better than I like soap and water. Ugh! Ugh! How I hate soap and water!"

(To be continued in the February issue.)


Health Puzzle
Besides the healthful fruits shown on the counter, other fruit is hidden about in this drawing. Can you help Tony and his little brother find a large banana, a pear and an apple?
5¢
NO
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News *and* Views

From the

FIELD OF HEALTH

INVESTIGATORS RECEIVE PHILADELPHIA MEDAL

Dr. Peyton Rous, who by his experiments with chickens has greatly advanced the knowledge of cancer; Dr. Alfred Hess, who is a leading authority on the use of ultraviolet light in the treatment of rickets, and Dr. Afranio do Amaral, who has done outstanding work in developing a snakebite serum, were recently awarded the John Scott Medal at the Academy of Natural Sciences in Philadelphia.

The award of the Scott medal, which carries an honorarium of $1,000, was made possible by a fund bequeathed in 1816 to the city of Philadelphia by an Edinburgh chemist.

BUSINESS WOMAN'S LUNCH IS HEALTH PROBLEM

Making the noonday lunch a contributing factor to vigorous health while adjusting it to the resources of the pocketbook is a problem worthy of the intelligent attack of the business woman, thinks a writer in the bulletin of the Syracuse department of health.

For those whose work is monotonous, luncheon is likely to be an adventure, with a resulting overemphasis on food. To the person with an exciting job, the midday meal is an interruption to be tolerated merely to ward off a headache. Neither attitude is desirable.

Luncheon should be planned with regard to its place in the daily quota of food. Every normal healthy woman should have daily two vegetables in addition to potatoes, from a pint to a quart of milk, two servings of meat, fish or poultry, one egg, not more than two cups of tea or coffee and from one to one and a half quarts of other liquids. Of course moderate amounts of fats, sweets and other appetizing foods should be added.

Considering the usual breakfast of citrous fruit, cereal with milk and coffee and the usual dinner of meat and two vegetables and dessert, the luncheon should furnish in general one glass of milk, a raw or green vegetable, whole wheat bread and a dessert made with egg. Then it should be eaten in pleasant, restful surroundings.

CHEMISTS REPORT NEW MOTH REPELLENT

Cinchona bark, from which quinine and other medicines are derived, has now been requisitioned by industrial chemists to produce a moth-repelling substance.

Dry cleaners, rug and furniture dealers, storage firms and factories, as well as housekeepers, have experimented with many methods of controlling the insidious insect, some fairly good, some with no noticeable effect.

Two chemists at the Mellon Institute of Industrial Research, after five years' study of the problem, have developed substances that have given good results in the most rigid tests in laboratories and factories.

Shortcomings of other moth repellents furnished the following interesting criteria to which the new substance is said to conform; it must be inodorous; it must adhere evenly to the fiber; it must be unrecognizable on the fiber; it must not dust off; it must not injure the fiber; it must be soluble in inexpensive organic solvents, as well as in water; it must be nontoxic to human beings; it must repel moths, and its cost must be reasonable from the industrial point of view.

PUNCH AND JUDY TEACH HEALTH IN BERLIN SCHOOL

Punch and Judy shows, beloved of all children, are employed to teach health lessons by an ingenious school teacher in Berlin, the Associated Press reports.

Kasperle, the German marionette corresponding to the English Punch, plays the rôle of a physician giving a consultation. He fires health questions and health information at his young audience in such an entertaining manner that the children learn valuable lessons without realizing that they are being taught.

NEWSPAPER PRINTS DAILY RECORD OF HEALTH RAYS

Daily reports of the intensity of the health-giving ultraviolet rays in the sunlight are now being published along with the usual weather report in the Tucson (Ariz.) *Citizen.* Similar records have been published for the past year by the London *Times,* but Tucson is the first American city to have accurate daily records available to the public.

The amount of ultraviolet rays in the sunlight is measured daily at the Mount Wilson Observatory in California and at Washington, D. C., and occasional tests are made in other cities, but the results are published only occasionally.

As the effect of sunlight on public health is more generally recognized, other newspapers will doubtless follow the example of the *Citizen.*

RED CROSS LENDS COW TO NEEDY FAMILIES

Although milk is one of the essentials for healthy living, sometimes poor people have a difficult time obtaining it. Recently a case of an entire family destitute and suffering from pellagra came to the Greenville, S. C., chapter of the Red Cross. Milk had to be furnished. The Red Cross solved the problem by taking up a collection and buying a cow.

After the pellagra victims recovered the chapter found that the loan cow was a valuable asset. Now any needy family in Greenville County may borrow the cow when milk is needed.

PAPER DIAPERS SAVE LAUNDRY

Mothers of young babies will be interested in a recent report of a South American physician on paper diapers. Extra heavy linen weave paper napkins 20 inches square made by an American paper company have been found highly satisfactory when placed inside a cloth diaper. The paper is of such a quality that it causes even less chafing and irritation of the baby's skin than improperly washed cloth diapers. Using the paper napkins saves laundry and is extremely convenient in traveling.

Wide World

Now girls are teaching boys athletics. This woman sprinter has turned out four championship relay teams in a Philadelphia elementary school.

Underwood and Underwood

Basketball provides husky exercise for winter days when inclement weather and hot radiators tempt one to be sluggish.

Testing gas masks is probably not an overcrowded occupation. These men are breathing air from a poison gas chamber, while the inspector is on the alert for defective masks, which he detects by the behavior of the wearers.

Pacific and Atlantic

Underwood and Underwood

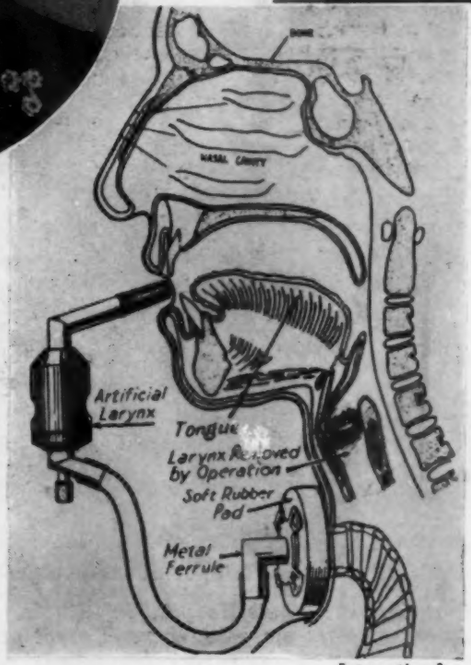
HOBBY DAY IS HAPPY DAY FOR THESE CHILDREN who have brought their favorite occupations to school.

Pacific and Atlantic

"Pretty badly hurt" is the message heard by the frantic wife shown in this poster, the first prize winner in the National Safety Council's contest.

International

THE OUTWARD APPEARANCE OF THE ARTIFICIAL LARYNX worn by T. C. Dupont is shown in the picture above.



International

The diagram at the left shows how an artificial voice works. T. Coleman Dupont, millionaire manufacturer, recently had to have his larynx removed and he has been enabled to talk by the use of an artificial larynx.

REPORT SUCCESS WITH ERYSIPELAS ANTITOXIN

Remarkable results in the treatment of erysipelas with an antitoxin which was recently developed by Dr. Konrad E. Birkhaug of the University of Rochester indicate that this painful disease of the skin is rapidly coming under control.

The treatment of 131 patients is reported in *The Journal* of the American Medical Association by Dr. Douglas Symmers and Dr. Kenneth M. Lewis of Bellevue Hospital, which maintains perhaps the largest and most active erysipelas service in the world.

The patients were divided into two groups. Half were treated by the Birkhaug method and the other half by other established methods. After critical observation, Dr. W. C. Lusk, who was in charge of the control group, asked that antitoxin be given to his patients.

Records of Bellevue Hospital show that in the past the mortality in erysipelas has been 10 per cent. In the controlled series, the mortality from all causes was about 5 per cent.

Although the antitoxin treatment does not give immunity, it shortens and lightens the course of the disease. The patients' time in the hospital is cut 50 per cent in many cases, thus reducing hospital bills. It is also a saving to the hospital, as it permits a reduction of 60 per cent in the nursing staff and does away with the destructive effect of ointments and other local applications on bed linen and sleeping garments.

OBSTACLES HELP DEVELOP CHILDREN AS CITIZENS

Normal boys and girls like to face difficulties and are anxious for tasks of greater and greater responsibility, observes Dr. W. H. Burnham of Clark University in the bulletin of the Illinois Society for Mental Hygiene.

One of the greatest contributions of the science of mental hygiene is to show the advantage to mental health of facing obstacles and opposition, Dr. Burnham says.

Too often parents harm their children by not giving them definite tasks, when this is the most simple and natural way to prepare future citizens for their duties. If children do have tasks, parents are likely not to have the patience to see them through.

If the normal impulse to do difficult things is rightly guided, children grow up without fear and face responsibility with confidence.

EXCESSIVE EATING MAY LEAD TO DIABETES

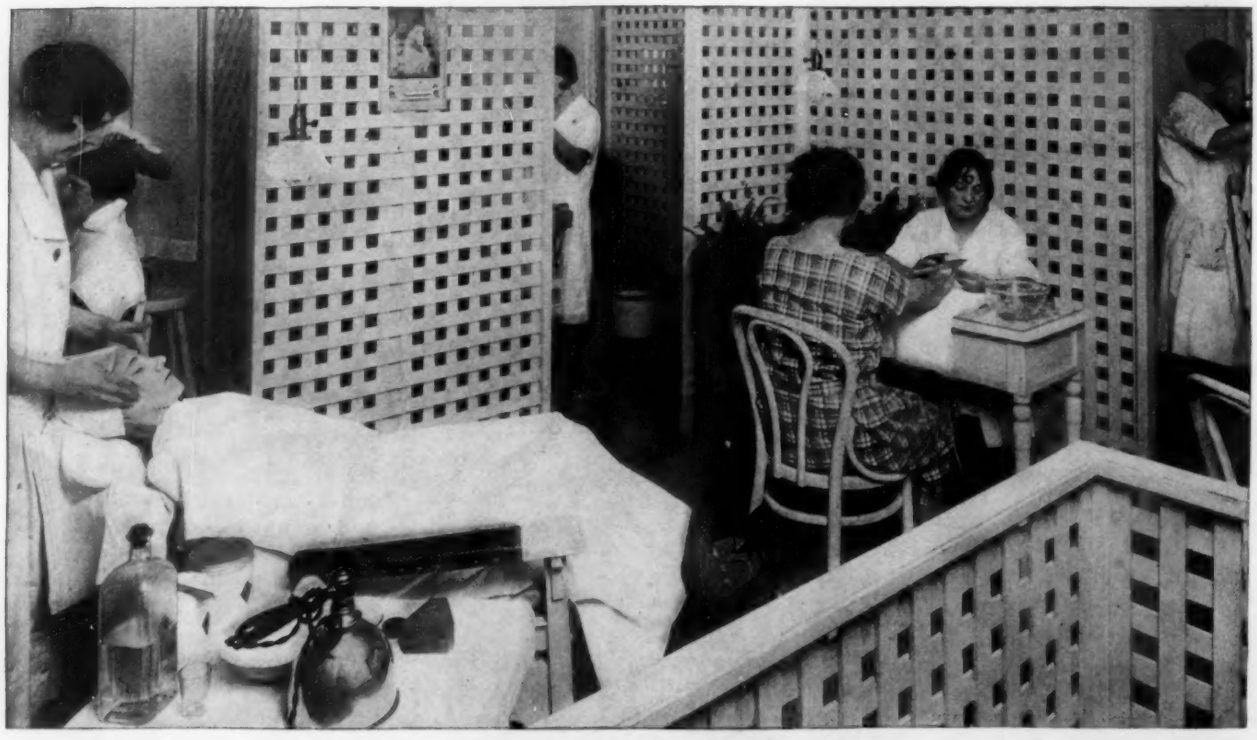
Obesity may be a forerunner of diabetes, says the bulletin of the Connecticut health department, in a warning to the person who is inclined to overeat. Excessive eating does not cause diabetes merely by the overloading method, but it puts too great a burden on the pancreas, the organ that controls the digestion and assimilation of sugar in the body.

When the pancreas does not furnish the necessary secretion, one is deprived of the source of energy that makes up the bulk of one's diet, breads, cereals and starchy vegetables, all of which form sugar in digestion.

Diabetes is easily discovered by a physical examination. If repeated analyses show sugar persisting in the urine, measures should be taken immediately to correct the patient's daily diet.

Insulin, an extract from the pancreas discovered a few years ago by two Canadian investigators, has made it possible for diabetic patients to take a fairly normal diet. But insulin alone cannot work these wonders. Once a person has diabetes watchfulness over his diet must be a lifetime business.

A Modern Beauty Parlor in a Hospital for the Insane



Rarely does one see an untidy patient at Kankakee State Hospital in Illinois. Since the custom of regular shampoos, marcels, facials and manicures was inaugurated, there is great pride in personal appearance. Many of the beauty parlor operators are themselves patients.

New Books *on* Health

Reviews of Interest to General Reader, Parent and Teacher

OUR TIMES

AMERICA FINDING HERSELF. By Mark Sullivan. Pp. 668. Price, $5. Charles Scribner's Sons, New York, 1927.

THE great theme of the first volume of Mr. Sullivan's history of the United States from 1900 to 1925 was preventive medicine. He showed that medicine had done more for mankind than had been accomplished by any other profession through its aid in freeing mankind from the fear of disease.

The theme of the second volume is the American mind. In order to trace the factors that make the American mind of today Mr. Sullivan goes back to the period 1880 to 1900. He devotes much space to the use of McGuffey's readers, to the famous Webster speller, to the popular songs and the customs of that period. Inevitably the government of the United States today was made by the trend of mind developed through the training of the young men who are our leaders.

The readers, the books that formed the texts of lessons in elocution, even the spellers, were used to develop the puritanical type of mind. It is amusing to read the description of the education in physiology and in hygiene.

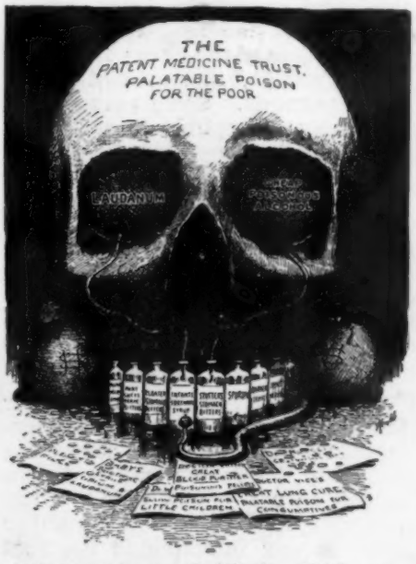
> The one conspicuous lack in the schools of 1865-1895 was science. In that field the only subject generally taught was physiology; and that was taught not as science and not in the scientific method, but for a reason apart from science, for a moral purpose. The method was memory-work wholly; the pupils learned by heart the names, in Latin, of the bones, arteries, veins, viscera, valves of the heart. Of the two hundred and fifty paragraphs of summary at the ends of the chapters in one widely used textbook, Blaisdell's "Our Bodies and How We Live," fifty dealt with the injurious effect of alcohol and tobacco on the organs and processes of the body. The preface had a footnote saying the work had been revised by an official of the Women's Christian Temperance Union. To Albert Mordell, who went to school in Philadelphia in the 1890's, "it seemed as if the reason for studying about the organs and skin was to learn the effects of alcohol and tobacco on them."

In some of the widely used textbooks of hygiene still the basis of education in many schools, the notions of the 1890's are promoted regardless of the actual advances that have been made in scientific knowledge in recent years.

In developing his account of the growth of the great trusts and of the oil industry particularly, Mr. Sullivan describes the first uses of oil by the traveling medicine men.

> They changed the common local name of rock oil to Seneca Oil, thereby adding the mysterious virtue supposed to reside in Indian medicines to the other virtue supposed, with no greater relevancy, to attach to the evil smell of the substance. As the "great American medicine," of the 1840's, it was put up in eight-ounce bottles, wrapped in gaudy circulars which recited miraculous—though anonymous—cures of "cholera morbus, liver complaint, bronchitis and consumption," and was peddled the length and breadth of the then settled portions of the country; sold, as were the other "Indian medicines," as "good for man or beast, for the lungs, liver and lights."

After tracing the development of Theodore Roosevelt, the downfall of Mark Hanna and similar important incidents related to the control of the trusts, Mr. Sullivan takes up the growth of the pure food law and of the campaign against vicious proprietary medicines. He connects the beginning of the clean-up in the food industry with the publication of Upton Sinclair's book "The Jungle." Most of the author's perspective is correct in relation to the attack on the vicious patent medicines. Much of the credit should go to the *Ladies' Home Journal* and to *Collier's*, but Mr. Sullivan has underestimated the share that the medical profession of the United States contributed in bringing about the better conditions that exist today.



Cartoon from Collier's, 1905, reproduced in "Our Times" to illustrate the war against the patent medicine business.

This fascinating volume concludes with an account of the development of the airplane and with a chronological analysis of the years 1904-1905. Here are accounts of the novels people read, the songs they sang, the plays they attended, the kind of clothes they wore. The book is one of pleasant reminiscences, and who does not love an hour of memories? Here are many happy hours of our youth, brought to us again and made vivid by Mr. Sullivan's art.

MORRIS FISHBEIN, M.D.

OUTLINES IN HEALTH EDUCATION FOR WOMEN

By Gertrude Bilhuber, Ph.B. and Isabelle Post, S.B. Pp. 192. Price, $2. A. S. Barnes and Company, New York, 1927.

HERE is an interesting scheme for teaching health. The material is presented from a scientific angle almost exclusively, with an extensive bibliography suited to the lay person interested in science rather than to the pure scientist. Rarely do the authors run to the dogmatic statements often made in overenthusiasm and ignorance by teachers of hygiene.

The material is divided into thirty-two outlines, presumably each a lesson. Outlines such as those on the endocrine glands, diseases of middle life, prevention of accidents and injuries, though comprehensive, are perhaps too complex to be taught to freshmen in a two hour lecture period. Presupposing active interest, one would hesitate to attempt this even with medical students.

Aside from this criticism, however, one can recommend this book highly. It is obviously the result of much hard work by the authors and contains knowledge which, if distributed as widely as are the nostrums of quacks, one-sided pseudo-scientific creeds and old wives' cures would take the "dilemma" out of most doctors' lives, and promote sound rules of living.

MARIE ORTMAYER, M.D.

Questions *and* Answers

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed.

Infections from Furs

To the Editor:—Are furs likely to lead to infections of the skin when laid on chairs in public places or when worn around the neck without frequent visits to a cleaner? Are the dyes used on some kinds of fur sanitary?

W. L. H., California.

Answer.—The likelihood of skin infections being conveyed by a fur neckpiece or coat, if it is simply laid over a chair or table, is rather remote but it is possible. Paraphenylendiamine, a dye used by furriers, is poisonous to the skin of some persons and has caused severe inflammations of the skin both by furs dyed with it and through the medium of hair dyes containing it.

Displacement of Uterus

To the Editor:—A woman of 37 has been confined to her bed for several days because of a pressure on the bladder causing some pain and a desire to urinate often. She has had headaches and pain in the back. An analysis showed a trace of albumin and an examination showed a backward displacement of the uterus. This latter condition may have existed for several years. Something is being done to relieve the temporary conditions but what about permanent relief? If there is a permanent backward displacement of the uterus, is there anything that can be done or is it necessary to pay any attention to it unless it causes constant trouble? The patient is nervous but otherwise usually enjoys good health, and has never experienced any trouble like this before. She has two children, aged 7 and 10.

B. B. H., Texas.

Answer.—In the absence of a personal examination and study of the case, it is quite impossible to determine the nature of the trouble. Displacements of the uterus are sometimes responsible for a good deal of disturbance and trouble but quite as frequently the same degree of displacement exists in women who go through life without any symptoms whatever. It is certain that not nearly so many operations are being performed as formerly. Whether or not the operation is advisable in this case is something that only the physician in attendance can decide.

Aspirin

To the Editor:—It seems to me that the promiscuous sale and use of aspirin is an unwise if not dangerous practice. Any advice or information in regard to this matter will be greatly appreciated.

C. R. C., Tennessee.

Answer.—Aspirin is a proprietary name for acetylsalicylic acid. The acyl derivatives of salicylic acids boast a higher pain and fever controlling action than most of the salicylates. These derivatives are employed in rheumatic conditions, in colds and in neuralgias.

"New and Nonofficial Remedies," an authoritative textbook published by the American Medical Association, states that "the promiscuous use of acetylsalicylic acid (aspirin) by the laity, especially for the relief of headache, has frequently led to cases of rather severe poisoning; the chief symptoms being edema (dropsy) of the lips, tongue, eyelids, nose, or of the entire face; also hives, vertigo, nausea and sometimes cyanosis. Some persons are especially susceptible to acetylsalicylic acid."

Teeth and Rheumatism

To the Editor:—Can a refilled back tooth cause rheumatism and cramps? My doctor says so and advises the extraction of the tooth, but the dentist says that it is not necessary to have it taken out.

C. A., Idaho.

Answer.—Whether a particular tooth might be the cause of rheumatism and cramps is something that only the doctor and dentist in actual charge can decide. X-ray photographs will show whether there is any infection at the root of the tooth. If there is and it cannot be properly cured by dental procedure, then it is usually best to have the tooth removed.

Round Shoulders

To the Editor:—I am a young man student in good health but am quite round shouldered. I have noticed that fewer young women than young men are round shouldered and can attribute this fact only to the better posture they are forced to assume when wearing corsets and high heels. Would it be beneficial for me to wear a well stayed, fairly tight corset while studying in the evening and also to wear high heels for a while? Would either be harmful?

R. A. D., Pennsylvania.

Answer.—The only way to prevent round shoulders is to cultivate good posture. Corsets are not likely to help this, but shoulder braces if properly adjusted serve as a constant reminder to throw the shoulders back and keep them back. These, with physical exercises that strengthen the muscles of the back, will help to straighten the shoulders. High heels would certainly not benefit the condition. An article defining good posture and describing exercises to prevent bad habits appears in this issue.

Diabetes Mellitus

To the Editor:—What are the disturbances occurring in the menstrual cycle in a young woman with diabetes mellitus? After reducing and maintaining blood sugar to normal is it possible for a woman having diabetes mellitus to give birth to a normal child? In childbirth, what is the prognosis of the mother in such a case?

K. S., Kansas.

Answer.—In many instances diabetes has no effect on the menstrual cycle; but in certain advanced cases, it leads to diminution or cessation of the flow.

It is entirely possible for a woman having diabetes mellitus to give birth to a normal child after reducing the blood sugar to normal.

If the symptoms are relieved, childbirth is accomplished normally. The great dread of pregnancy complicating diabetes is in large part due to the article written by Matthews Duncan years ago, in which he stated that in the majority of the cases which he found in medical literature the patient died either during pregnancy, at the

time of labor, or within one year afterward.

This has not been the experience of all obstetricians as a number of women who have had diabetes for years have during its course given birth to healthy children. Furthermore, in not a few cases, it appears that in the second half of pregnancy the fetal pancreas functions so abundantly that it replaces the lacking pancreatic hormone, with the result that from that time until the first months of lactation, the patient is sugar free on an ordinary diet, whereas before and after that time the urine contains sugar that is often practically uncontrollable by any dietary restrictions.

Paralysis from a Blood Clot

To the Editor:—How long does it take for a person paralyzed from a blood clot to recover? I was paralyzed three and a half years ago, when my baby was born. Is there any treatment that will help? I have taken some electric treatments and also osteopathic treatments. At first my entire left side was paralyzed, but I can walk now and the rest of my side seems all right, but I cannot use my hand. R. C. S., Oklahoma.

Answer.—It is impossible to say how long the paralysis from the blood clot such as is described may endure. In some cases, recovery is complete in a few months. In others full recovery never takes place. It all depends on the extent and character of the original trouble. The fact that the patient is gradually recovering is encouraging.

Osteopathic treatments would probably not be of much help but any massage might help to strengthen the muscles. The only course to pursue in such a case is to have a competent physician, see him from time to time and follow his advice strictly.

Sloughing Phagedena

To the Editor:—When sloughing phagedena invades a wound, is it due to a state of debility in the patient or to an infection? If due to an infection, how long does the germ retain its virulence away from the wound? Are the majority of cases fatal? In gangrene is there usually a great increase in the white blood cells? G. S., Michigan.

Answer.—Sloughing phagedena is an old term used to describe any gangrenous process in a wound. In pre-antiseptic days infections were the usual cause.

At the present time such a gangrenous process occurs only occasionally. It may occur in a wound without infection, as a result of a local lack of blood supply. It is more likely to occur in association with a general debilitating disease or following a prolonged illness.

Several varieties of bacteria may cause gangrene in a wound. It develops more frequently in a deep lacerated wound. The contamination of accidental wounds is not difficult because bacteria that cause gangrene are sometimes present on soiled clothing and in street dirt. These bacteria are more virulent when several varieties are associated and may retain their virulence almost indefinitely.

The prognosis depends on the condition of the patient, the location of the gangrene, the kinds of bacteria and the institution of early treatment. The mortality varies from 5 to 80 per cent. It is always a serious complication.

There is usually, but not always, a marked increase in the white blood cells.

Nervous Child

To the Editor:—A nervous little girl of 3 with a furious temper is difficult to control. In addition she is disobedient and untruthful. She has absolutely no patience and on the slightest excuse will hold her breath, lie down on the floor and kick. The child is physically perfect, up to weight and intelligent. It is not a question of faulty rearing as her temper has been evident from the time she was 4 months old. Please suggest any good reading matter on this subject. P. M. O., Illinois.

Answer.—As is so often the case in matters of discipline, parents must get themselves right before they attempt to straighten out their children. These definite factors are present in this case: (1) a furious temper; (2) difficulty in controlling it; (3) disobedience; (4) untruthfulness; (5) impatience, and (6) breath-holding. At some ages, this would constitute a serious indictment, both of the child who presented these defects and of the parental management that had permitted them to develop.

At the age of 3, however, the situation is quite different. The only one of the counts in the indictment that is at all serious, and that calls for prompt treatment, is the one involving breath-holding. This can best be controlled by the simple method of completely disregarding it. This will be easy, if the mother can realize that the child can do herself no earthly harm by holding her breath, unless she learns that it is an effective means of controlling the parent's conduct toward her by the fear that it inspires.

Not one of the other things need give any mother concern because it has not been controlled by the age of 3; still less because it was present at the age of 4 months. Many adults, in spite of a lifetime of effort, still suffer in more or less marked degree from all of them. This does not mean that this mother should not be trying to instil into her child's consciousness the beginnings of all the things she lacks. It does mean, however, that one should not feel desperate because she has not yet completed this lifelong task; nor should one allow that desperation to show itself in attempts at handling situations that arise.

If for instance the sound psychologic dictum that "a lie at 3 years is natural, at 6 years is occasional, at 9 years is serious, and at 12 years, tragic," is recognized, one may be more patient with a child's natural manifestation of untruthfulness at this age.

Punishment, especially if like most punishment it is administered in exasperation, will harm the child on every count and will help her in none of them. Patient, gentle, firm meeting of each situation as it arises, with a ready sense of humor, will carry one through these annoying but not really crucial experiences.

A series of helpful articles on this subject written by Dr. Frank Howard Richardson was published in HYGEIA during 1927.

Geographic Tongue

To the Editor:—What is geographic sore mouth? What is its cause? Is there any known cure? Will it ultimately result in cancer? I. B. Z., Michigan.

Answer.—The term "geographic tongue" is applied to the appearance of the tongue which results from a disease known as wandering rash, or circinate eruption of the tongue, and by a number of other terms. It is an uncommon disease, usually seen in children, but occasionally in adults, and consists of one or more patches on the back of the tongue which are first about pea size, smooth and red, but shortly increase in size, with a reddish smooth center and a yellowish ring-like border.

As the patches grow larger and reach the border of the tongue, they lose their ring shape, forming only part of a circle. Meeting of these rings gives a peculiar appearance, looking somewhat like a map and hence the name geographic tongue. Sometimes the circular patches contract instead of widening and every circle may disappear from the surface. Fresh patches may form inside the patch already developed, thus giving the appearance of circles within circles.

There are rarely any symptoms except occasional itching of the

tongue, sometimes quite severe. The life of each ring is short, only six or seven days but the entire process with recurring patches may last for a long time. The cause is unknown, but it is believed to be a parasite. A treatment that includes the improvement of the general strength may be helpful. Locally, soothing or astringent lotions are helpful.

Incipient Epilepsy

To the Editor:—A doctor visiting Cincinnati during health week is reported in a local paper to have said that incipient epilepsy could be detected by the appearance of white spots on the forearm and face. For eighteen months, I have been under treatment for extreme nervousness. A few months ago, several white spots appeared on each of my forearms, and I have had attacks of what I thought was extreme exhaustion, during which, while I did not lose consciousness, I felt that I might die. My nails have lost all color, as have my lips, and two of the toes on my left foot became entirely numb, although they are better lately.

W. R. M., Ohio.

Answer.—Epilepsy is a symptom and not a disease, and it seems improbable that the observation of white spots on the face and arms is of any value in diagnosis. Judging from the symptoms given by the inquirer, she is probably not suffering from epilepsy, but from some other functional disturbance of the nervous system. She should consult a competent physician.

Duodenal Ulcer

To the Editor:—My husband is on a diet for duodenal ulcer, and I find the list of forbidden foods a little difficult to interpret. Would tomatoes, raw or cooked, be included among acids and sour foods? Would cream of tomato soup be permitted? Are meat gravies and meat extractives classed in the same category? Would onions, raw or cooked, be harmful? Is raw cabbage a very coarse food? Are the fruits with many seeds, such as figs and raspberries, harmful? What are the principal foods containing albumin? C. E. W., Michigan.

Answer.—It is not possible to prescribe a diet for patients with duodenal ulcer, without medical examination and study of the case. Tomatoes are acid in reaction but they are not included among the acid-forming foods. Whether or not cream of tomato soup, which is thickened milk flavored with tomato juice, would be suitable in the case described, is something that only the attending physician could decide. The same is true of onions. Onions either raw or cooked might easily irritate an ulcer just as any other vegetable containing some cellulose might cause irritation. Foods flavored with onion, in which the solid material is all strained out, could be used in many cases.

Meat gravies and meat soups stimulate the secretion of the acid gastric juice and are therefore usually objectionable when there is an ulcer.

Raw cabbage is a coarse food in the sense that it has a good deal of indigestible residue. The same is true of the fruits with seeds.

Albumin is contained in milk, eggs, meat of all sorts; its equivalent in the form of gluten is abundant in cereals, and in another form in vegetables like peas and beans. A certain amount of protein material is contained in almost all foods, but in the green vegetables, the starchy vegetables and most of the fruits, the percentage is small.

Syphilis

To the Editor:—I am a woman of 27 and it was accidentally discovered a year ago that I had syphilis, although I had none of the signs and symptoms. The Wassermann test was strongly positive, and subsequent tests have also been four plus. The physician called mine a case of innocent contagion as there were no signs of congenital infection and it was not contracted otherwise. Treatment was begun immediately and has been continued at the intervals recommended. I have stood the treatment well and have not been sick at all. Am I in danger of infecting others in the home or in going about in a normal manner among my friends? If no improvement is shown after two or three years' treatment should all thoughts of marriage be forever cast aside? This question worries me as I had hoped to marry next year. What about marriage if some improvement is obtained but the tests are not completely negative? What about children?

L. B., Florida.

Answer.—The persistent, strongly positive Wassermann reaction of the blood is considered proof that the individual has been at some time infected with syphilis and that colonies of the parasite (spirochete) are still living somewhere in the body. Under intelligent treatment the reaction generally becomes negative, for a time at least, though often it returns to positive months or years after treatment is discontinued.

The failure to change the reaction to negative by treatment—the so-called "Wassermann-fast" condition—is especially frequent in those who received little or no treatment during the first years of the infection. In these the spinal fluid also often furnishes the accepted evidences of syphilis. Thorough treatment with mercury and iodine may change the blood reaction after arsenic and bismuth preparations have failed.

It is known that persons have carried living typhoid bacilli in their gallbladders many years with no apparent impairment of health from these parasites; others have carried tubercle bacilli with equal immunity. In short, it is recognized that a virtual cure of disease is sometimes secured not alone by destruction of the invading parasites, but also by the development of immunity to their poisons, rendering these germs harmless to the carrier so long as this immunity endures. There is reason to believe that the spirochete carrier also may live indefinitely in good health, especially if his immunity be renewed by periodical treatment.

The inquirer may be assured that she cannot infect members of her family and that after proper treatment she cannot infect the man she may marry. That she can bear children free from syphilis is probable, provided she renews her immunity to the disease by a periodical course of treatment, just as one should renew one's immunity to smallpox by vaccination every few years.

Pure Oxygen as Anesthetic

To the Editor:—Is pure oxygen ever used as an anesthetic? If not, with what gases is it combined as an anesthetic, and in what proportions? J. M. H., Iowa.

Answer.—Pure oxygen is not used as an anesthetic. It is sometimes given with ether and chloroform, instead of combining those agents with air. It is always administered with nitrous oxide and ethylene. The percentage is determined by the age and physical condition of the patient and by the depth of anesthesia required by operative procedure.

Diet of Children

To the Editor:—Please advise me on the dosage of cod liver oil for a baby 7 months old. Does raw whole milk constipate children? If so, how can this condition be overcome? Does orange juice or grapefruit given with milk conflict? M. M., Pennsylvania.

Answer.—For babies 7 months old, from 15 to 20 drops of cod liver oil two or three times a day would be a suitable dose. This, however, should be directed by a physician familiar with the case. The dose that can be taken depends on the condition of the particular child.

When milk is the only food taken, it sometimes seems to constipate because there is so little indigestible residue in it. But in children from 6 months on, when cereals and vegetables are added to the diet, there is usually no difficulty with constipation.

Grapefruit and orange juice in the diet do not usually conflict with milk. It is usually better to give these juices a short time after the milk.

Infantile Paralysis

To the Editor:—It is the desire of the local board of education to become informed about infantile paralysis. Is it more prevalent in hot weather? How is it carried or contracted? How long is a carrier dangerous? Is it advisable to refuse school admittance to exposed children? Can it be carried by members of the sick child's family? Are there preventive measures?

R. W., Indiana.

Answer.—Most outbreaks of infantile paralysis occur during the latter part of the summer and early autumn. However, some outbreaks have occurred during cold weather. The cause of the disease not being known, it is impossible to state just how it is contracted and carried or to know how long a carrier is dangerous.

The generally accepted theory is that there are many cases of mild infection that are not recognized as infantile paralysis. Those who have had such mild attacks are supposed to spread the infection. In the absence of more accurate information regarding the cause of the disease, it is impossible to know of what value are quarantine measures. There is no recognized preventive.

Tuberculosis of the Uterus

To the Editor:—What causes tuberculosis of the uterus? Is it a rare disease? Can it be cured? Can a small tumor on the outside of the uterus be cured by deep therapy treatments and x-ray treatments? Would you recommend deep therapy treatments?

L. B., Michigan.

Answer.—Tuberculosis of the genital organs is caused by the same organism that causes tuberculosis of the lungs. It is not a rare condition. Of the genital organs the tubes are most often infected, but next to them comes the uterus.

The patient's lungs are usually the primary seat of the infection. It is believed that the bacteria may be carried through either the blood vessels or lymph vessels. A surgical operation is occasionally required, but there is a tendency toward spontaneous healing.

Neither deep x-ray therapy nor radium is desirable for small tumors on the outside of the uterus. As a general rule surgical removal is a proper treatment for uterine tumors that cause trouble. Tumors on the outside of the uterus can be removed without sacrificing the child-bearing function. In older women it may be advisable to remove the entire body of the uterus. X-ray and radium may cause a gradual shrinkage of tumors of small or moderate size, which are growing in the wall of the uterus, but since they both destroy ovarian function when used in sufficient dosage, they are not desirable for younger women.

Milk and Diarrhea

To the Editor:—Several persons I know would like to drink milk but it causes diarrhea soon after drinking. What could be used in the milk to prevent this?

H. B., Maryland.

Answer.—It is unusual for milk to cause diarrhea. Is the milk clean, fresh, uncontaminated and of good quality? The popular impression is that milk tends to constipate rather than to produce looseness of the bowels. A few persons do not tolerate milk well. For them boiling the milk and thickening it a little with flour, as is done in making cream toast, is usually helpful. The milk so prepared can be salted a bit or sweetened.

Inflammation of the Eyelids

To the Editor:—What bacteria cause blepharitis? What is the progress and cure of this disease? Is this trouble infectious? Does it cause blindness, or does diet have anything to do with it? Can any diet help it? Do acids or antacids help? Vinegar and apples seem to aggravate it, at least temporarily. The light hurts my eyes.

M. E. M., Connecticut.

Answer.—Blepharitis affects the glands and follicles of the eyelashes, the edges of the eyelids being the seat of the disease. It is not usually due to bacteria. The causes are many, such as poor hygienic surroundings; debilitated condition of the system; exposure to dust, smoke, gas fumes, wind or sun; lack of rest and sleep; lack of cleanliness; nasal affections, and errors of refraction. It usually yields to treatment but is often obstinate.

Blepharitis is not infectious but frequently follows scarlet fever or measles. It does not cause blindness but in extreme cases may impair the vision. All faulty habits of body and diet should be corrected and the most nourishing foods given. Acid and antacid treatment will not help. Vinegar or apples would probably not have any effect.

The patient should avoid bright light. The "hurt" complained of may be due to need of proper glasses.

Hernia

To the Editor:—I have a rupture about 2 inches below the appendix. As I do not wish to be operated on, I should like to know of a hospital that can effect a cure without an operation.

J. E. B., Tennessee.

Answer.—There is no reliable cure for hernia in the adult other than operation. Various substances have been injected into the canal to set up an inflammation that would close the canal and prevent a return of the rupture, but the plan is not satisfactory; nor is it without danger.

The best physicians advise surgical operation, unless the rupture can be prevented from coming down by a truss that can be worn with comfort. When one does rely on a truss, it should be worn constantly except when in bed.

Insomnia

To the Editor:—I am troubled with insomnia. Sometimes I feel that the strain of mental activity, since I am a serious minded student at a university, causes my unrest. As a counterbalance I usually take an hour or two of physical exercise, but I find little relief. I think that it is a case of the mind more than anything else but I cannot find a remedy for it. I was given a prescription for one luminal tablet to be taken at night. Would you recommend this? Would these tablets not be harmful in the long run? They relieve me but I am afraid of becoming addicted to the use of drugs.

S. P., Nevada.

Answer.—It is impossible to advise as to use of drugs in an individual case. Some unpleasant reports have been made recently from the abuse of luminal. It is a powerful drug and should not be taken except on the advice and under the constant direction of a physician.

Chlorine Gas Treatment for Colds

To the Editor:—I suffer a great deal with head colds. During the past few weeks I have been hearing and reading about the chlorine gas treatment. What do you know about this treatment?

F. E. P. New Jersey.

Answer.—The chlorine gas treatment for colds and influenza has not succeeded in establishing itself as of much value. It has been less and less used by physicians with large experience every year since it was originally proposed.

Ethmoid Sinus

To the Editor:—My brother, who has had two nose operations, is now informed that his trouble is probably in the ethmoid sinus. He was given some medicine to take after meals, and if it does not improve the condition, then an operation or a change of climate is to be considered. I am wondering in just what way this medicine would help the condition, and if trouble in the ethmoid sinus is serious? Where is the ethmoid sinus?

J. S., Minnesota.

Answer.—The ethmoid sinus consists of a number of air cells in the ethmoid bone, which lies between the two orbits containing the eyeballs and therefore just above the nose. These cells communicate with the nasal cavity. This sinus may become infected just as do other sinuses opening into the nasal cavity.

Whether the condition in the case described is such as to require an operation in addition to those already performed, is impossible to judge except by the physician who makes a special examination.

White Spots on Nails

To the Editor:—What causes white spots on finger nails? I have been told several times that they are a result of stomach trouble, but when I have stomach trouble, the spots don't appear and when they do appear, my stomach is not bothering me.

D. C., Idaho.

Answer.—White spots on the nail are caused by any injury or disorder that interferes with the nutrition of the root of the nail. They sometimes result from a slight injury and sometimes follow any illness that weakens the individual.

Cataract

To the Editor:—What causes cataracts? I have a cataract in one eye. Am I likely to have one in the other? It is called an opacity. Do they always turn into cataracts? Are nearsighted people likely to have them? Is there a nonsurgical cure for them? Do you think it advisable to use lens extract for cataracts? Does one see well after an operation for cataract, if it is skilfully done? Does a cataract have to cover the entire eye before operation, or can it be removed when it starts? Do bad teeth cause cataracts?

J. H., Washington.

Answer.—The term cataract means clouding or opacity of the lens or its capsule or both, and is due to some disturbance in the nutrition of the crystalline lens within the eye. There are several varieties and forms of cataract and they may vary in their consistency.

Among predisposing causes are age, certain diseases (diabetes, Bright's disease, syphilis), toxemias from foci of infection somewhere in the body (such as diseased teeth), occupation, heredity, strain of accommodation (need of glasses), and injury.

A cataract in one eye does not necessarily indicate that one will develop in the other eye, though it is common to have cataracts in both eyes, either developing simultaneously or succeeding one another. There is no nonsurgical treatment of cataract that can be considered generally efficacious. Incipient cataracts seem occasionally to be benefited by various treatments, such as the administration of lens extract or foreign protein injections but, generally speaking, surgery offers the best and only chance of restoring vision.

Such an operation is generally successful in the hands of an experienced surgeon. Many excellent results have been secured from operation on immature cataracts, though most surgeons consider the chance of a satisfactory result is greater with mature cataracts.

So many conditions must be considered in connection with the management of cataract that each case must be considered by itself. Advice should be secured from a well trained physician who has had a large experience in the treatment and management of diseases and abnormalities of the human eye.

Fibroid Tumor

To the Editor:—Is there any cure for a fibroid tumor of the uterus besides surgical operation? I was told more than a year ago by a surgeon that I had a fibroid tumor the size of a coconut. It causes me no discomfort or trouble, but I should like to get rid of it in some way other than by operation.

F. H., Colorado.

Answer.—There is no satisfactory cure for such a large fibroid tumor of the uterus other than its surgical removal. This, in a young woman, might mean removal of the growth but not of the uterus itself. A tumor as large as a coconut is too big for treatment by radium or x-ray, and this method of treatment is not suitable in the case of a young woman. X-ray or radium is applicable to small growths in women who are approaching the change of life.

The most conservative and most certain cure of a fibroid growth is its removal by operation. Such a growth is subject to degenerative changes or to malignancy, especially if it is large, and it should not be allowed to remain just because, at present, it gives rise to no symptoms.

Radium Treatments for Goiter

To the Editor:—Will you please give me your opinion of radium treatments for goiter? Have you seen cases in which there has been cure without operation and is there any danger in radium treatments if given by a good physician? The goiter is an inward one, and the eyes are slightly bulged. How long would one need to take treatments?

E. P. Pennsylvania.

Answer.—The x-ray and radium are being used in certain cases of enlargement of the thyroid gland of the exophthalmic variety. The opinions of physicians differ as to the results. Many of the best physicians believe that when it is obvious that hyperactivity of the thyroid is producing serious symptoms, removal of a portion of the gland by the surgeon is the best remedy.

Ear Phones

To the Editor:—Will you give me your opinion as to the merits of the Gem Ear Phone, which I am considering purchasing?

E. J. W., Wyoming.

Answer.—The Little Gem Ear Phone is one of the numerous electrical aids to hearing operating on the principle of the portable telephone with a microphone attachment. Such devices are, in general, meritorious and have a proper place on the market. However, they should be advertised merely as aids to hearing in selective cases and not as promiscuous cures for deafness. Recent advertising of the Gem Ear Phone has not come to hand, but some of the older advertising is decidedly quackish in tone.

It is a good plan never to pay for any hearing device until one has had opportunity to test it thoroughly. If one can hear satisfactorily under all the usual conditions, then it can be safely purchased. Some of the bona-fide aids to hearing are sold on this basis. The American Federation of Organizations for the Hard of Hearing, 1601 35th Street, N. W., Washington, D. C., gives out information about hearing devices.

Vaccine for Measles

To the Editor:—Is there a measles vaccine of value for the prevention of the disease?

H. M. S., Nebraska.

Answer.—In measles, the injection of the serum of the blood of a person who has recovered from the disease has been found of value both as a preventive and as a curative measure. Whether it is advisable in a particular case, is a question which only the physician in attendance could decide.